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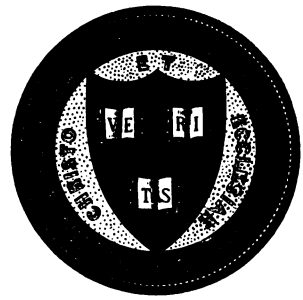

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OF THE

DENTAL SCHOOL

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Boston, Mass.

Received

May 1911

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TRANSACTIONS

HARVARD UNIVERSITY
DENTAL SCHOOL

OF THE

Twenty-fifth Annual Session

OF THE

SOUTHERN DENTAL ASSOCIATION,

AUGUST 2d to 6th, 1894.

HYGEIA HOTEL, OLD POINT COMFORT, VA.

Reported by MRS. J. M. WALKER

Edited by DR. T. B. WELCH.

PHILADELPHIA:
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1895.

HARVARD UNIVERSITY
SCHOOL OF DENTAL MEDICINE

TRANSACTIONS

OF THE

SOUTHERN DENTAL ASSOCIATION.

The Southern Dental Association convened in twenty-fifth annual session, Thursday, August 2d, 1894. The President, Dr. B. Holly Smith (Baltimore, Md.), presided. Dr. W. H. Morgan (Nashville, Tenn.), opened with prayer.

Dr. E. P. Beadles (Danville, Virginia,) delivered an address of welcome on the part of the Virginia State Dental Association, as follows:

Mr. President and Gentlemen of the Southern Dental Association:

I am before you as the representative of the Virginia State Dental Association, to extend to you a welcome from your Virginia brethren of our common and well-beloved profession.

I am here, however, only as a substitute. I am in another man's place. This, of itself, is embarrassing. No two men fit the same place. I am both too short and too narrow to fill the space I am trying to occupy. The man selected to give a word of welcome at this hour, is well known to you all. For more than half a century he has been helping, by mighty efforts, to upbuild and strengthen the dental profession. In our annual meetings his voice has been often heard; in many of the journals the results of his pen have been read by dentists all over the land. He was Vice-President of the great Columbian Dental Congress. He has been President of your own honored Association. He has filled every position to which he has been elected with honor to himself and credit to his State. He is a true type of the old Virginia gentleman. I refer to our beloved friend, Dr. W. W. H. Thackston.

In the language of my friend Crawford, of Tennessee, I wish you to shake the hand of the Virginia dentists through me to-day, and feel that our hearts are in the grasp. We welcome you, our friends from the North, because to know each other better will make a closer friendship; we welcome you, our friends from the West, because we wish to imbibe some of your vim and energy, that we may go on to greater things; we welcome you, our friends from the Pacific slope, beyond the Rockies, that you may

* Having contracted to publish the proceedings of the Southern Dental Association, only on condition of "editorial revision at our discretion," we assume the full responsibility for all omissions and revisions in both papers and discussions, made by us in the almost verbatim report furnished us by Mrs. J. M. Walker, official reporter for the Southern Dental Association.—Ed. ITEMS OF INTEREST.

compare the ever-rolling Atlantic with the peaceful waters of your own great ocean; we welcome you, our friends from the Southland, because you are our brothers, bone of our bone, and flesh of our flesh. Let us all join hands in the work to be done here, and make this meeting a success.

"Welcome" is a magic word to Virginians; we have heard it from the time we began to lisp at our mother's knee, and have been taught that the stranger within our gates is always welcome. Well do we know that our hospitality is not what it once was; changed circumstances have produced this; but, my friends, the *desire* is still within our hearts, and if we do not measure up to what we would like, it is from inability, and not from lack of desire to give our friends a royal welcome.

We are proud to have you with us. Enjoy yourselves. You are on historic ground. Near here—just there on the winding James—stand the remains of the first settlement of Englishmen on this great continent. Here the dusky maiden of the forest saved the pale-faced chief from a tragic death. There in Hampton Roads is the place where one of the most heroic battles was fought, ever engaged in by man. In this fort was imprisoned that great chieftain, the President of the late Confederacy. We hope you can here find food for both mind and body; and when you leave these shores, where the music of the wave is ever heard, and where every breath is ladened with invigorating health, we hope you will feel fully repaid for having come.

Again, my friends, I bid you welcome, and hope that you will carry away many pleasant remembrances from this meeting. I am sure we will cherish the same in our hearts after your departure.

The President, D. Holly Smith, responded as follows:

GENTLEMEN OF THE SOUTHERN DENTAL ASSOCIATION.*

The cordial and heartfelt welcome which has been tendered us by the Virginia Association is entirely in keeping with the reputation and character of that society, and is precisely what we would expect from the representative of a State where warm-hearted hospitality is an inborn principle of the life of the people, and not a custom assumed and dismissed at will.

I will not deny, gentlemen, that I esteem it a proud and honored moment of my existence when I am privileged, as the mouth-piece of this distinguished and honorable body, to make their warmest acknowledgments for this generous and royal Virginia welcome.

This honor seems the greater to me, when I reflect that I am speaking to those whose State numbers among her Associations the oldest living dental society.

I believe it was the original intention of those who arranged for this meeting, that the address of welcome should be delivered by Dr. W. W. H. Thackston.

Now, Dr. Thackston is the oldest living graduate of the Baltimore College of Dental Surgery, and it is at least interesting to reflect on the unique coincidence which would have occurred in the event this part of the program had been completed as originally designed—an address of welcome by the oldest living graduate of the oldest existing dental college on the part of the State claiming the oldest living dental organization in the world.

* Published without editing, by request.—EDITOR.

But, however much of interest may have attached to the proposed welcome of Dr. Thackston, either on account of its intrinsic worth, or on account of the unique coincidences with their train of pleasant and thought-awakening associations, I know, gentlemen of the Southern Dental, you unite with me in the opinion that no welcome could come with a truer, more genuine ring to a more responsive and appreciative body of men than the one we have just heard.

We all feel that we are in sympathy and accord for the work before us, and that the augury for success is most favorable and inspiring.

I shall make no attempt to disguise, gentlemen, either the fullness of the honor with which I am here crowned, or the gravity of the responsibility which I realize as the essential condition of that honor's acceptance and enjoyment; and I must confess to you, not in any spirit of mock modesty or assumed humility, but in the plain language of very truth and soberness, how keenly I feel my own inadequacy to measure up to the earnest requirements of this situation, and with what timidity, I may say trepidation, I approach the discharge of my important functions as presiding officer of this deliberative body. But, gentlemen, I would not have my worst enemy believe, and much less my professional brethren, that this mistrust is caused by any fear of the responsibilities implied, by any desire to escape the labor involved, or any wish to avoid the friendly and fraternal clashing of differing opinions and plans.

I rely on your cordial and earnest support; I invoke your fraternal and generous sympathy, and I trust implicitly your united experience, learning and wisdom to plan wisely, and to execute energetically and courageously in all that concerns and affects the interests of dentistry. With this hopeful and stimulating inspiration, there can be no discouragement as to the ultimate good results of this body's deliberations, and to this end let the best efforts of all be earnestly and fraternally directed.

I shall endeavor, in what I have to say to this Association, to invite your thought and attention to questions of two classes, and while, as one whose convictions are earnest, I undoubtedly have opinions regarding the best manner of solving the questions stated, I desire this convention to understand at the very outset of their deliberation that as a loyal member of this body, and as a true brother of this noble profession, it shall be my earnest endeavor to ascertain the concensus of opinion, and to be governed by what shall be decided as best and most practicable for the profession at large.

We all feel that this is the true spirit with which to approach all questions affecting our conservation and expansion; that our interests are identical; that our desire to further those interests equally earnest and ardent; that the stimulus of appreciation, encouragement and sympathy awaits every one with a worthy message and a noble thought, and the discipline of a wise and discreet expression will be promptly imposed on unwise or radical impulsiveness.

And first, gentlemen, I shall invite your consideration to some reflections on the functions of this Association and associations of a kindred character.

Remember that we unite here the best of our profession to speak and act for our entire profession, and it is but natural that more than discursive eloquence and entertaining oratory are demanded of us.

Our brethren look to us for results.

They expect to see us establish in associations such as these a helpful and aggressive leadership in all questions which concern either the policy or the action of the profession at large.

They demand of us a spirit sufficiently broad, a wisdom sufficiently great, and an influence sufficiently powerful to unite for beneficial action the several State Associations which we touch in our professional existence on a well-defined program or plan, where execution shall redound to the credit and glory of all. They expect us to propose the outline, and to stimulate its execution wherever the stimulus of our existence and work can make themselves felt.

Undoubtedly, gentlemen, our influence and our leadership among the State Societies, whose membership goes to make up this Association, should be more powerful and stimulating. By wise action and a more potent energy this most desirable result can surely be accomplished, and at the very outset of your deliberations I desire to hold up to your view, as an object which we must all most earnestly strive to attain, this development of closer and more beneficial relationship between our Society and our sister societies of the several States. I do not think that it requires argument to establish the importance of securing this much-to-be desired end, but I do say it will require wise and considerate action to secure the marks of esteem and confidence which this closer relation implies—we must thoroughly deserve it. We must impress our sister societies of the States that their interests are allied with ours, and that we are capable, with their assistance, of accomplishing those ends, and attaining those objects in which we all as members of the profession are deeply concerned.

We must do some missionary work in this regard, and we look for loyal and cordial support from every member of this Association.

I really feel, gentlemen, that till this union is brought about, and this closer relationship established, we have not, as an Association, fulfilled our obligation to the profession. Let the State Societies give us their best and most trusted men, and let us in return give to them our best thought, our wisest counsel, that they may act wisely on such suggestions as are wise, and learn the force of the great truth that "in union there is strength."

Now, gentlemen, it is not improbable that one reason why we have as a body not the weight and influence we should have with State Societies, is that we lack definiteness and decision ourselves.

Consider our attitude toward questions whose discussion and decision would proclaim the policy of the Association in their regard. Many of these questions are discussed and discussed, but it seems somehow we lack either the inclination or the machinery for avowing our policy regarding these problems. No decision of what would be for the best interest of the profession is arrived at, and both societies and individuals are left to settle many of them according to whim, caprice or prejudice, and entirely without the direction, the trend, we might say, of a professional point of view.

Take, as an instance, the entry into the profesion of those young men who propose to make dentistry their life work. Now, leaving entirely out of view those who have already secured admission into the profession, with the distinct and avowed purpose of injuring and offending no one, there has surely been enough thought and discussion on this one topic to settle

in the minds of most of us the conviction that this Association should have a distinct and well-defined policy regarding this question.

These associations have surely concluded pretty well and definitely what line of action on their part will best tend to conserve the professional spirit and to promote professional interests as affected by this question.

We are all entirely familiar with the theory on which the State, through examining boards, guards the entry to the practice of dentistry.

The welfare of the citizen is, in theory, at least, the prime consideration with the State—and, inasmuch as the work of the practitioner of dentistry has to do with the health of the citizen, the State gives, through examining boards the problem to the citizen. Naturally, regulations of this kind are welcomed by dentists, and we are all perfectly familiar with the reasons of their acceptableness.

The profession, as well as the citizen, is recognized and protected. And yet we have no hesitancy in saying that in many thoughtful minds a grave question arises as to whether this method of entry into the practice of our profession is the one best calculated to guarantee the conservation and development of that profession's interests.

Now, the standard which the State should establish, is, justly and equitably, no higher than that which secures its citizens from ignorance, malpractice and quackery. It has nothing to do with ideals, it deals entirely with primary essentials. Moreover, the State must come to the profession for even this elementary standard, and must depend on professional knowledge and discrimination for its test.

Independently of any question that may be raised from acquaintance with members of State Examining Boards, the query may at least be propounded, What is the best method of securing the desired end? Is it one that submits a flexible and adjustable test, a test that may be either too severe or too lax, and must be, in a great measure, from the very conditions, inadequate—or is it one that does not presuppose but actually requires preparation? As a matter of fact, among those who study such matters from a pedagogical point of view, the value of what are called examinations is very seriously questioned—there are so many things connected with them that impair and qualify the value of the results that they aim to establish that they are regarded as imperfect and unsatisfactory tests. Surely a better is one which has as its antecedent condition the professional and scientific instruction of the candidate for entry into the profession. It is true this warning may be a condition precedent of him who submits himself to the test of examination at the hands of a State Board, but we all know that it is not necessarily so.

It may happen, so uncertain and unreliable are the results of examinations generally, that he whose training is superior may, by the examination, be either shelved or classed as inferior and untrustworthy.

Whatever may be the consensus of opinion among the members of this Society on this particular point, it does not seem to me that there ought to be any opposition to the proposition that on this, as on other vital questions, the principle and policy of the Society should be formulated and crystallized into something definite.

We can secure what is best by designed and definite action as a body—just as soon as the best can be discerned and assimilated, it can be made manifest in action.

And, gentlemen, it is the duty of a society like this to assume the functions and the responsibilities of leadership. Concerted and united action will grow more frequently and with greater salutary effect from wise leadership and direction than from a promiscuous and undirected association.

We have before us as marked and distinct undertakings, first, an examination of the territory and a selection of those questions whose solution, more than that of others, affects the profession vitally; and second, the securing of the attention of State Societies to these questions and of a decision in regard to them. It can not be denied that we are largely in the formative phase of our existence, but luckily so far advanced that we shall have much to do with our own shaping—we are the architects of our own fortunes.

Is it not our duty to shape the live thought of our profession, and to stimulate this thought to circulation among State Societies to bear fruit in definite, beneficial action?

In this connection, it is not inappropriate to mention the fact that in the meeting of representatives of examining boards, held recently in the State of New Jersey, the resolution was adopted to appoint a committee to draft a general dental law bearing on this subject of admittance to the practice of dentistry. And I here believe it appropriate to recommend the appointment of a committee of three of our own Association to act with committees of other associations to compile a law which shall be accepted by the whole profession.

I can not forego giving expression to the hope that all energy exerted in this direction may have the effect of influencing examining boards to accept, in lieu of examinations, the diplomas of reputable colleges, and I submit the decision of any question of this character on its merits to this and any kindred Association for approval or disapproval.

Again, gentlemen of this Association, I feel sure that you will all coincide with me in the view that one most important function of this Association is education, using the word now in its technical sense and as applied entirely to the science and practice of dentistry.

We make liberal drafts yearly on the time and ability of the most talented members of our profession. We secure here the study and discussion of questions most interesting from a professional point of view, and we have elaborate demonstrations by way of clinics.

In fact, our membership devote themselves and their best efforts to the work of this Association, both in preparation and exhibition with spirit and liberality, almost with prodigality, and it does seem to me we should obtain a result more commensurate with the labor expended.

We are probably lacking in disposition to settle as to practice many mooted points on which it would be comparatively easy to obtain a clear and distinct view by proper handling.

And we allow many questions that are comparatively time-worn to show their unsettled, Banquo-like forms at each succeeding meeting.

Moreover, we leave the results of a clinic, a paper or a discussion to float before us all hazy and undefined, without a proper attempt to concentrate, express and emphasize the vital points at issue in a form accessible to the profession.

Now how to get at the mass of professional instruction, scholarly work, skill and care—how to have it arranged in convenient and accessible shape is a question worthy of your wise consideration.

Now regarding the exposition of the best features of the points developed by a clinic, and the correction of any apparent blunders, it seems to me we might arrive at excellent results by a plan something like the following:

Have some one appointed to be known as Censor of Clinics, and let it be his duty to submit the work of the clinician, both as to principle of treatment involved and as to performance, to a rigid and impartial professional criticism, largely for the purpose of accenting, developing and causing to stand in bold relief the principle features of the clinic.

Then allow the clinician due time to respond to this criticism and to defend his ideas, and by this alternation the main points, say of a clinic, will certainly be developed with clearness and accuracy.

In addition, we can with profit here, as has been done in the profession of medicine, establish commissions of dentists of learning and reputation, whose duty it shall be to formulate a decision on best methods in those cases whose oft-recurring and never-settled discussion and agitation are not always an interesting and pleasant feature of these meetings.

We have surely among us men of sufficient standing in the dental community to utter a dictum on many of these points, and one that shall be received with credit and respect, and can be referred to as authority when issued as the report of a commission as here suggested.

That the work of these commissions may be of greater value, it would be well that they pass on as many of the agitated questions as is possible.

There is no claim made for originality in the suggestion I am now about to offer, but the suggestion is made as probably the best method of collecting the desired data on which to act. The suggestion is to have a systematic series of questions issued to the several State Societies, the answers to these questions designed to furnish pretty thoroughly the topics it would be most desirable for us to go into, and then let those who obtain these replies select and give to the Association, as a committee report, the selected material.

In acting on this report, and in the reference of the mooted points to commissions for the best decisions thereon, a body of what may be called authority will be accumulated which can not but be beneficial to this Association and to the profession at large.

The proper formulation and publication under the seal and sanction of the Association of the conclusions of the several Commissions, need, it seems to me, but to be suggested as the proper and legitimate link in the chain.

When this is completed and ready for reference, we shall have an authoritative text on many important points, which, while it shall not be infallible, shall at least be good doctrine till refuted, and shall have the good effect of settling many points on which incalculable effort and labor have been wasted.

And now, gentlemen, I commend to your assembled energy and wisdom the important and engrossing interests of this Association. I invoke to its deliberations your genius, your prudence, your foresight, the inspiration of your devoted love to a noble profession.

I call on you to do honor to the profession to which you belong, the men who compose it, and the grand old State in which you meet.

It is not possible with such inspiring suggestions as shall here be offered, that we shall go away empty handed from this Association.

Rather shall we depart with more refined and acute intelligence, with keener appreciations of the worth and merit of our professional brethren,

with clearer views of the desirable and attainable ends of our professional work, and with a more complete and entire devotion to the development and expansion of dentistry's usefulness and beneficence.

On motion of Dr. Taft, the President's address was referred to a committee of three, to be reported back to the Association for discussion.

The Chair appointed Drs. Taft, Crawford and Catching on this committee.

The minutes of the last annual meeting, held in Chicago, were read by the Secretary and approved.

The courtesies of the floor were extended to all members of the Virginia State Dental Association and to all visiting dentists.

The following were made active members: J. W. Boozer, Columbia, S. C.; S. H. McKee, Americus, Ga.; J. E. Frazier, Birmingham, Ala.; C. V. Rosser, Atlanta, Ga.; John S. Marshall, Chicago, Ill.; I. N. Carr, Tarboro, N. C.

The following were reinstated, on payment of two years' back dues: T. H. Parramore, Hampton, Va.; Wm. Crenshaw, Atlanta, Ga.; W. H. Morgan, Nashville, Tenn.; J. R. Woodley, Norfolk, Va.; F. H. McAnally, Jasper, Ala.; H. D. Boyd, Troy, Ala.; D. E. Everett, Raleigh, N. C.; D. N. Rust, Alexandria, Va.

Dr. W. H. Morgan: I am glad to be reinstated in this old Association. There are only three of us here who can tell the story of its organization from our own knowledge. I am mortified to find myself behind with my dues, as I was the first one to sign the Constitution of this Association. I am glad to see the old members coming back. We "builded better than we knew."

Dr. B. H. Catching: There are but few charter members of the Association surviving, after the lapse of a quarter of a century. I move you, sir, that as an honor to which they are entitled, all charter members be exempt from further payment of dues. Seconded and carried with applause.

Dr. Geo. J. Friedricks: As one of the charter members of the Association, I appreciate the honor intended; but I have paid my dues for twenty-five years, and as long as I am able to be present among you, I hope to continue to pay my dues.

Dr. Crawford announced the hours for clinics and the rules established for the same.

Adjourned to 3 P. M.

THURSDAY, August 2d, 3 P. M.

The special committee appointed on charges preferred against Dr. E. B. Marshall, Rome, Ga., reported the facts in the case. After a lengthy discussion the following preamble and resolution was adopted:

WHEREAS, In view of the letters read and the facts stated by the committee; and in view of Dr. Marshall's acknowledgment of error and implied regrets at having unknowingly violated the code of ethics; and in view of his long services as a charter member of the Association; be it

Resolved, That the Secretary be instructed to formulate a synopsis of the action of the Association, and that the charges against Dr. E. B. Marshall be dropped.

Dr. John S. Thompson, Chairman Prosthetic Dentistry, offered a partial report.

Dr. T. P. Hinman read a paper, entitled "Protecting Tips of Porcelain Teeth in Bridge-work; also, Banding Logan Crown," as follows:

PROTECTING TIPS OF PORCELAIN TEETH IN BRIDGE-WORK.

A beautiful piece of bridge-work is not stronger than the weak porcelain facing that give it such beauty.

How are we to strengthen and protect these fragile parts, without destroying their artistic beauty?

We should always use "up and down pin teeth," instead of the "cross pin teeth," because in the "up and down pin teeth" the strain is more equally divided, the pins being placed on the long axis of the tooth, and, generally, placed farther apart.

To protect porcelain facing from strain, bevel the porcelain on the inside with a corundum stone, beginning a little below the lower pin and grinding carefully toward the cutting edge so as to leave the cutting edge a knife edge (this grinding should be done with a fine corundum stone, as the coarse ones are liable to fracture the porcelain at the thin edge). Now back up the tooth with 22k. gold plate, 29g., letting the gold extend about one-sixteenth of an inch over the cutting edge, but not being burnished to it.

The backing is now covered with base-plate wax, the wax being trimmed away over the portion of the beveled facing.

Invest the tooth, covering up everything except the wax, and when the plaster is hard, remove the wax and flow solder over the exposed part of the backing, using enough to restore the contour of the tooth. When cool, remove and polish each facing, wax into position on the bridge, arrange the teeth as desired, re-invest and solder the joints, and when cool remove from the investment and burnish the portion of the plate not covered with solder, down to the beveled portion of each tooth. Thus we protect the cutting edge from strain, by making the cutting edge an incline plane, and the angle thus made prevents pressure from coming on the porcelain, it being sustained by the backing.

If the backing be burnished to the angle or beveled portion of the tooth before the solder is flowed, the contraction of the metal on cooling will be sure to break it.

TO BAND A LOGAN CROWN.

Prepare the tooth to be crowned as for a Richmond crown; make a gold band of 22k. 29g., leaving it extra wide and larger at the opening than at the root; select crown and grind to fit the root proximately, the band being removed during this part of the operation; replace the band on the root and grind away the crown so as to fit the opening of the band tightly; then drive the crown home with a mallet, the band hugging the crown very

tightly. Remove the band and crown together, and with a corundum stone proceed to grind the band away in front, but leaving it long in the back. The grinding should be always toward the tooth, as it will burnish the band to it, the long portion in the back being ground and burnished by the grinding over the bulbous portion. If this be done carefully, the band will cling tightly to the tooth and a perfect joint will be made. This method requires no inside disk and no soldering, so that a crown can be banded quicker than by grinding one to fit the abutment of the root, and it is certainly much stronger and more durable.

Dr. H. A. Parr, New York: I do not see that there is anything new in the paper of Dr. Hinman. The idea illustrated is old. I know nothing about Logan crowns. I have never used one. The trouble with teeth cracking is generally in the soldering. If the heat is uniformly distributed, there is no cause for them to crack.

Dr. Hinman: I do not claim any originality in the method of grinding or soldering, but in the one point of burnishing the pure gold down over the beveled edge of the porcelain tooth after the soldering is completed.

Dr. W. H. Morgan: It is news to me that a piece of gold plate can be burnished down into such close contact as to hug the tooth and stay there. In my experience, it will always spring back. I have never seen it done.

Dr. Parr: If you let the metal run down to the cutting edge, waxing-up down to the cutting edge, and then flow solder all around, it will not crack. It is impossible to make such a perfect joint that there will be no breakage between the metal and the porcelain, but we do the best we can. Every time you touch the gold you put spring in it. When you have got it just where you want it, let it alone. The paper says, invariably bevel to a knife edge, and burnish to that edge, extending over. I say take pure gold, lay it on loosely, the solder will bring it to a close joint, and the porcelain will not crack unless a very heavy strain is put on it.

Dr. W. C. Barrett, Buffalo, N. Y.: You cannot burnish gold on to porcelain and make it stay there; it will get away. I have never used a Logan crown, so I can say nothing on that part of the paper. The subject of crown and bridge-work is now engaging the best minds in the profession, and is endless. Many of us can look back to the time when teeth were ruthlessly extracted. Thanks to crown and bridge-work, most can now be saved. Yet, much of this work done in the recent past, is calculated to do more injury than good, but it is capable of conferring the greatest benefits, enabling us to save many more teeth than formerly, and to avoid the necessity of many plates. It thus deserves our earnest consideration. If it can be demonstrated that gold can be burnished on to porcelain, after a bridge is finished, to remain there with a close joint, it is a great step in advance, and will repay me for coming here.

Dr. L. P. Dotterer, Charleston, S. C.: I have a method which is very satisfactory to me. In a bicuspid, for instance, where the face is all gone, but with the palatine wall standing, and the patient does not want an "artificial tooth," so you cannot cut it off, my plan is to use a combination gold crown with porcelain face. I take a central incisor, or other porcelain face to suit the case, and back it, soldering the sides of the backing to the edges of a gold band around the tooth, making a hollow crown to accommodate the palatine portion of the tooth, strengthening the inside with solder, and having the band very narrow on the buccal surface of the root. With a nice adjustment of the backing to the band it is serviceable and pretty in appearance, the back being all gold, and the face all porcelain.

Dr. H. E. Beach: What style of porcelain face is used? The fusible glass of which we hear so much has no value for this kind of work; the glass is of very poor quality and does not stand wear.

Dr. Dotterer: I use the regular porcelain faces or veneers.

Dr. H. E. Beach: In soldering the backing to a tooth after grinding to a sharp edge, solder must be flowed to the very edge to stiffen the backing and protect the tooth. Pure gold alone, burnished to the tooth, is no protection; it is too soft and too malleable. If the tooth is brought to a beveled edge, the gold burnished as close as possible and solder flowed to the edge, with uniform heat, it will not crack; only a slight line of gold should show, but the solder is necessary to stiffen the backing and protect the frail edge.

Dr. R. R. Freeman: When I looked over the program I saw as the title of the paper to be read, "Occlusion of Artificial Teeth," and I thought I would present an idea of my own, which has been valuable to me. It may not be original. The great utility of artificial teeth lies in perfect occlusion with the remaining natural teeth. In bridge-work, including bicuspids and molars, it is important to get a perfect articulation between the natural and the artificial teeth. I use modeling compound, instead of plaster, for the bite, and flow in Melotte's fusible metal, which gives a very exact bite on which to adjust my work. There is no wearing away as with plaster, and by swaging or pressing between metallic casts you can get a very good occlusion. When I heat the fusible metal, I put a little water in the spoon with the metal, so that I get a heat of 212°, and it sets immediately.

Dr. H. A. Parr, New York: As the gold over the end of the tooth is for protection only, and not for beauty, why not lay the metal over first, and then flow the solder all over it. Then grind

off only the solder and finish it up as wanted, as, for instance, in a bicuspid, when all the force comes on the end of the tooth. I do not see how you can lead solder where wanted if you do not first have the gold in place.

Dr. Wm. Crenshaw, Atlanta, Ga.: Dr. Parr, in shoeing the edges of porcelain teeth, do you not grind and bevel the tooth before laying on the pure gold, and flow solder over it?

Dr. Parr: Not necessarily.

Dr. Crenshaw: How do you burnish over the round edge of the porcelain? By the ordinary methods, beveling the tooth from the back at an angle of 45°, you are very apt to break the tooth at some stage of the proceedings.

Dr. Ford: I will describe my method of using an old tooth in new work. I had occasion to combine bridge-work with elongation of the teeth, because of mechanical abrasion.

I was not able to get any teeth to suit the case. It was necessary to elongate both the upper and lower teeth. The nerves of the teeth were all either exposed or dead, and I was obliged to cut the teeth off to the gums as though for pivoting. I thought of the English tube-crown teeth, and found they suited the case exactly. They are the least unsightly when used in bridge-work, are easily replaced if broken off, without removing the bridge, and require no unsightly gold tips. I am using them more and more.

Dr. W. G. Browne, Atlanta, Ga.: I have a method which gives me satisfaction. I use very thin platinum and place a compressed cylinder of gold under it, burnishing proximately; grinding off to a feather-edge bevel brings it into perfect contact, and the solder follows the interstices of the cylinder under the platinum, and you can flow it without fear of burning your gold. If you cannot get a tooth of exact color, and wish to darken it, do not put the gold under the platinum or between it and the porcelain. Grinding down with fine corundum stone makes a very close fit.

Dr. S. B. Cook, Chattanooga, Tenn.: Gold is very sensitive to the burnisher, and the more you burnish it the farther away it gets; it puts a spring-temper in it. For the best results I use platinum, and simply press it down with a soft piece of wood. First anneal it, and then press it down and leave it in place, and it will be in contact. I believe the reason why we break our porcelain teeth is that we break into the enamel; that is as bad for a porcelain tooth as for a natural tooth. If we destroy the surface of a vulcanized piece, it will warp. The tubuli of the finished surface are all filled up, and it should not be broken. Another fault with our gold is that we use too much flux in

soldering. In burnishing, soft gold will go down if you deal gently with it. Always file away from the inside. It injures a porcelain tooth to grind it.

Dr. Parr: I seldom use a tooth that I do not grind it somewhere to get a nice articulation. You may grind a tooth at any angle, and I will solder it to-morrow, and you can test the result. Grind it oval, or square, or beveled. The trouble is not with the grinding or beveling, but in the way you apply heat.

Dr. Crawford: The paper has awakened an interesting discussion, and I feel under obligations to Dr. Hinman for his concise paper. I think we are spending much time in learning as new what our fathers learned before we were born. This attempt to gain strength by tipping and shoeing porcelain teeth is a useless expenditure of time, and fractures more teeth than it preserves. We must depend more on non-occlusion than on strong backing reinforced with solder. You can back either an oval or a flat-faced tooth and get perfect adaptation.

Leave the gold slightly concave and as near the natural size of the tooth as possible, and when the backing is accurately adjusted rivet the pins, and with a fine corundum-disk—run toward the tooth—bring it to a feather edge. If a 22k. backing, cover the entire surface with 22k. solder, as the gold will not resist wear; pile on enough to strengthen it thoroughly. Discoloration comes from soldering on unclean gold; pickle it to its virgin condition before soldering, then your gold will not blacken, and use little flux.

Dr. W. H. Morgan: To say that cutting the enamel of an artificial tooth weakens it is all wrong; the body of the tooth is much stronger than the enamel, as my friend Welch, or any manufacturer, will tell you. Forty years ago we adjusted the butts of the teeth up against the irregular surface of a gold plate and soldered them to place by their backings, having interstices in which foreign matter gathered and decomposed, soon making a gold plate very offensive. Then we learned to take gold foil and tuck it into all these spaces and run solder over it, making a uniform surface, and we found that solder would follow the gold and make a close joint. But you can't put a backing on a bicuspid and expect to flow solder over the porcelain cusps—gold has no affinity for porcelain; there must be a metal foundation for the solder to take hold of. Roughen the edges of the gold with a rough file and the solder takes hold, but you cannot burnish it down into contact and expect it to stay there. It becomes springy because by pressure the particles are brought into closer contact. We, who had long used soft gold, and then tried cohesive gold, suffered crucifixion in trying to make it stay where we put it. As a gentleman once said to me: "I make

beautiful fillings with it, but some how they get away from the tooth and are loose when finished." If you lay a pillow down and press it down in the middle it will cock up at both ends, and it is the same with gold; as it hardens it contracts and draws up.

Dr. Parr: If you take a piece of pure gold the size and shape of a pencil, and bend it, you can never bend it twice in the same place. In working gold you must anneal it continually to take the spring out of it, and you must handle platinum in the same way. Get the best joint you can, and don't expect to make it perfect. As Dr. Morgan says, the whole process of crown and bridge-work is old. All these ideas we bring forward as new were known to the fathers years ago.

Dr. Hinman being called on to close the discussion, said: I feel at a disadvantage. Many of you are old enough to be my daddy. But I am glad I read my paper, for it has called forth a discussion from which I have learned heaps. I must say, however, that after I burnish down my gold, after the piece is soldered and otherwise finished, I do make it hug down—not with the burnisher though, but with a fine corundum stone and sand-paper, then cuttle-fish disks. I know I do it.

Dr. Crossland, Montgomery, Ala.: I thought I did it too, but if these old men say I cannot do it, I suppose I don't; but it certainly looks like it, and answers every purpose.

Dr. E. P. Beadles, Danville, Va., read the following paper, discussion of which was postponed till after the reading of other papers from the same section:

ANTERIOR FILLINGS.

In this discussion, which will be brief, I shall confine myself to the four upper incisors and the two cuspids.

First as to the operator himself, then the preparation of the cavity and introduction of the filling.

No operator, however expert, can perform good work in a cramped, awkward or tiresome position. His position must be a natural one. With the back bent, or head twisted, or any other unnatural position he will soon bring fatigue, and the best results are not obtained. The upright posture, as straight as an Indian, standing to the right and partially behind the patient, with the head bent slightly forward, is the posture to be maintained when operating on the anterior teeth, and with very slight modifications the proper position in filling all teeth.

Those who have not been operating in this way may not understand how such a position is possible, till I mention the fact that the mouth mirror is an indispensable adjunct to this method. The mouth mirror, in my opinion, is the means of salvation to the dentist. I never fill a cavity, whatever material is used, without the assistance of the mirror, unless the buccal surface of the anterior teeth be excepted. By its use the upright position can always be maintained. I can do as much operating in a day as any other

dentist, and yet never had a backache in my life. The bending over the patient, even resting on their breasts, is disgusting and unnecessary. Elevating your chair to the ceiling to "get at" a cavity in the lingual wall of a central incisor is never called for. My chair assumes almost exactly the same position at all times. With the exception of slightly raising or lowering, the same position suits my purpose for all teeth. No man who has not made intelligent use of the mouth mirror can imagine what it saves, even in lower molars, in grinding surfaces to reflect light into the cavity.

I once heard a dentist boast that he never used a mouth mirror in filling teeth. This man was quite as far wrong as the man who never used a rubber-dam, or the one who had never used a dental engine. Learn to use all these if you wish to operate with comfort to yourself and to your patient.

PREPARATION OF CAVITY.

This paper is intended to be practical, and all is drawn exclusively from my own experience.

Above all, do not mutilate the teeth. Nature knows best, and no man yet has improved on her forms.

A few days ago I saw the mouth of an accomplished and wealthy young lady with almost every tooth in her mouth cut out of all shape with V-shaped spaces from centrals to third molars; every filling was well inserted, and some of them were excellent; but that horrible mutilation! It is a shame on the dental profession. For two years I have done good work without seeing the necessity of resorting to this practice.

Don't use rubber wedges for separating; why should you make a hell for your poor victims? Don't use separators with a lever a foot long, to force the teeth apart.

Don't, for heaven's sake, don't drive cords of wood between the teeth of some nervous woman and make her shriek as did the victims of the Inquisition. All such torture a dentist can inflict and call it "practice by the latest methods," but it is barbarism.

In the first place, who can give an intelligent reason for so much space between the teeth to insert a little simple filling requiring fifteen or twenty minutes? When I had been practicing dentistry about two months, there came to me a young man to have two centrals filled. I put in a piece of rubber to get a separation. The boy suffered so that his father pulled the rubber out, then gave me a small piece of his mind. That was the first piece of rubber I used in my practice, and with the help of a sound mind it will be my last piece. All the separating a first-class dentist needs, except in rare instances, is space enough to pass a thin sand-paper disk through. All you need is room enough to polish the filling after its insertion. If you have not this space to begin with, wedge in a small piece of dry cotton, not too tightly, and dismiss your patient till the next day, when there will be ample room for your purpose, *i. e.*, if you know how to do it. This will be easy and simple enough, if you will cut away the enamel wall on the lingual side, cut it all away, so as to expose the cavity to be reflected in the mirror.

No man can fill a cavity properly, certainly not with cohesive foil (and I doubt very seriously whether he can with non-cohesive), unless he can see every part of it. Who can work around a corner? The shape of the cavity when ready for the reception of the gold should be that of a cube or square

with rounded corners, no sharp right angles. We should sometimes make a slight groove in the cervical wall for the reception of the first piece of gold, which should be non-cohesive. The sides of the cavity should be as nearly parallel as possible, no under cuts and no pits or retaining points. Many dentists prepare their cavities with the one idea that this filling must not fall out, leaving the preservation of the tooth entirely out of the question. Remember, that if you prevent leakage and decay, your filling will remain. With the walls prepared as described above, you can easily make a water-tight filling. After filling your groove, condense well over the cervical margin, and burnish. By doing this you have the margin safe, and you need not interfere with it again. This is an important point, and if attended to at this time it can be done more thoroughly than afterward.

Of course, the whole filling can be inserted with non-cohesive foil, but from this point on I generally use cohesive. Rolling the gold between the fingers (the superstition about not touching gold with the fingers has about gone), I anneal and cut into pellets of the desired size. I prefer to make my own pellets, as no manufacturer can make them to suit every case.

If the non-cohesive foil is properly condensed, not too hard, the annealed foil will readily cohere and the filling can proceed. Keep the proximal wall well burnished as you go along, and when the operation is finished, polish with a fine sand-paper disk, finishing with one of cuttlefish.

As to instruments used, one small straight (or nearly straight) round-pointed steel-handled plugger, one flat pointed, and one or two right angle round pointed ebony-handled pluggers, are all the instruments necessary. I use very few pluggers, consequently I am well acquainted with them. The gold is packed thoroughly against every wall, every pressure being directed toward the wall. This is one of the secrets of perfect filling. And when packing the gold against the wall don't use serrated points, for they come in contact with the wall, leaving a space where the instrument is serrated which will become a leak. Smooth points are needed here, the serrated ones can be used in the body of the filling, but I care very little for serrations anywhere.

Don't pound your filling and your patient to death. Some men seem to have an idea that the more gold they can condense into a cavity the better the filling. This is a mistake. It weakens the gold when hammered too much, as the pellets do not cohere as well to a hard, smooth surface. When the cavity is filled, stop. Why a man should build a mountain of gold, simply to be ground off, is a puzzle to me. I have seen operators of great reputation build as much gold outside of the necessary contour as they had in the cavity. Why this waste of gold and waste of your patient's patience? To trim off this gold is especially objectionable if the tooth be sensitive to the heat caused by friction. Place exactly what gold you need, and no more. By the method here described, using hand pressure, very frail walls can be built against with safety, and with the assurance your filling will remain. I am a firm believer in hand pressure. I have no electric plugger; no Bonwill mallet; nothing except an automatic, which is the least used of any instrument in my cabinet. It may be that I am stronger in my hands than many operators, but, after condensing by hand, I find that no blow that can be tolerated by the patient from an automatic condenses the gold further. This is a great comfort to the patient. No mechanical invention can improve on the human hand. More force can thus be used, as the

pressure is steady and gradual. As to time, with practice I am confident as much rapidity can be attained by this as any other method.

Even in the anterior teeth I sometimes use other material in combination with gold. Cement can thus be used by filling the cavity nearly full, then pressing into the soft cement a few pieces of annealed gold, waiting till the former has hardened, then finishing. Amalgam may also be found desirable in a few cases, facing the labial surface with gold.

Adjourned to 8.30 P. M.

THURSDAY, August 2d, 8 P. M.

Dr. S. W. Foster, Decatur, Ala., read the following paper:

FILLING MADE IN LABORATORY.

Whatever the operation may be, the dentist should consider the welfare of his patients, both in selecting the proper material and in giving his best manipulative skill. We should also employ methods and appliances that will give the patient the least pain and discomfort consistent with good work.

Two years since a machinist received a blow from the handle of an iron maul, on the central incisors, breaking both off at the gingival margin of the mesial surface, diagonally across to the angle of the distal surface. Usually I would have removed the pulp and remaining part of teeth, replacing with a Richmond or a Logan crown. But in this instance I prepared the right central for the reception of a gold filling, depending largely for anchorage on a gold wire set in the tooth about midway between the labial groove, pointing diagonally to near the mesial angle. The left central, which was a duplicate of that just described, had a little more nearly exposed pulp. This we restored with a contour filling made in our laboratory. We first beveled the margins of the fracture and accurately burnished a thin plate of platinum to the surface, allowing it to extend a little beyond the margin of fracture. Through this were drilled three small holes. At parallel angles were inserted platinum pins, and contoured wax over this from labial surface across the mesial edge. Back and flush over the fractured edge of palatine surface was burnished another thin piece of platinum. By using a warm burnisher, the platinum was made to adhere to the wax. The whole was then removed and invested, leaving the mesial margin exposed, the wax burned out and the pocket filled with 22k. gold solder. The investment was removed and piece finished and adjusted to the stump. The entire operation was completed in a little more than an hour. The patient asked why I did not fix the first as I had that one. A few evenings before coming to this convention I sent for the young man, that I might see the relative merits of both fillings. I found the one filled with Williams' cohesive gold beginning to slightly pit over the surface, and the angle of the mesial corner was a little defaced. The filling made in my laboratory retained a smooth surface and was in perfect position, giving a much better expression than the other. This fact, as well as the facility and ease with which they can be adjusted, give them merit. A porcelain faced filling is preferable, but to the average operator it is impossible to get an accurate adjustment; therefore, all things being considered, the all-gold filling made in the laboratory is superior.

Dr. ———: How was your laboratory-made filling attached to the tooth?

Dr. Foster: With cement, in the usual way.

Dr. F. Abbott, New York: We should inflict as little pain as possible. This encourages people in having their teeth cared for. When the rubber-dam was introduced I was struck by what was claimed for it, and at once procured a supply, but I found great difficulty in applying it; and also that it was often excessively painful if so adjusted as to secure the desired results. I therefore abandoned it, except in extreme cases. I do not use it on more than one out of a hundred patients, where it might be used, but where I can do the work with less trouble and in less time without it.

A word about the use of obtunding medicaments. Twenty-five or thirty years ago, if the dentine was sensitive, arsenic was applied in the cavity for a few hours. In a few days the tooth discolored, the pulp died, and abscesses followed.

Now we have all kinds of obtundents from all parts of the country. I use none of them except a simple alkali, usually harmless. I put my patient under regular treatment for some time. A teaspoonful of soda in a glass of water, and ordering the patient to hold a little in the mouth twenty or thirty times a day; the next day double the proportion of soda, and the third day double it again. On the fourth day I put the soda in the cavities for some time before cutting the tooth. By that time I can cut without pain.

But this can only be done where you have control of your patients. Alkali is a natural tooth obtundent. The teeth are not normally sensitive, but when inflamed by acids, which produce decay, they become excessively sensitive. Soda restores them to a healthful condition. Much of the pain and soreness suffered by patients is caused by bungling operators. There is everything in knowing what you want to do and how to do it.

Dr. G. J. Freidrichs, New Orleans: I cannot endorse Dr. Abbott when he says a sensitive tooth can not be in normal condition.

Dr. Crawford: I would criticize the use of platinum in contact with the dentine. By the use of soft wood, pure gold can be adapted as closely as cohesive foil for a filling. It is unnecessary to make the little pocket in the platinum burnished over the wax. If the platinum pins are extended far enough out they form a framework for the gold, and we can use 22k. gold all through.

These gold restorations made in the laboratory, for the six anterior teeth, are very good for a gentleman's mouth, but for a lady or for a gentleman, if very esthetic, I should prefer porcelain restoration. The retaining pins must be carefully located at

parallel angles. In my clinics I will bring out the location of guide pins; in bridge-work, also, the principle is involved, and the formation of the holes and the use of all gold instead of platinum. I object to the use of different metals in the teeth. We can better combat pathological conditions if we use but one metal. The construction and form of the attachment of crown and bridge-work requires more thought and study than many imagine.

Dr. Morgan: I have had neither experience nor observations in laboratory work for filling teeth. In the cases represented on the paper, I should build up and contour them, and see no reason why I should change my practice, though the results might be satisfactory. Sometimes when the pulp is very nearly exposed, it is necessary to destroy it and fill the root. If for a young patient, it complicates the case, as the root end may not be perfectly formed, but have a funnel-shaped opening the wrong way. Not long since I saw a case like this, which I filled nineteen years ago. The patient was then a boy of twelve years. The incisors were broken off from the mesial corner up to the border of the gum. I filled with cohesive gold, driving it in with the mallet. They are still in good condition. I cannot understand how one such filling can exhaust both patient and operator. Recently at a college clinic I had a similar case, where I had to clean and fill the root and restore the contour. I learned afterward that the boys had "held the watch" on me. I had taken exactly fifty-five minutes, using six and a half sheets of No. 5 gold, so I do not see how such a case should take three or four hours.

The other paper (Dr. Beadles') is admirably written, and I admire the writer as much as any man I know in the profession, but I do not like his dogmatic style; it is not scientific. What he said was equivalent to saying that no man could work successfully if he did not view his work through a mirror. Now I have been filling teeth for many years, but I do not use a mirror. I want both of my hands for other purposes. If I took one hand to hold a mirror I could not do good work. Again, he dogmatically says that the only position for the operator is always at the right side or behind the patient. Now that may be good for him, if it is the only position in which he can work, but it is not my way. I could not see into the patient's mouth, and reach every part, if always in that position. I must look into the mouth and see the end of the instrument, then I know where it goes. Some men stand in front of the patient; some at one side, and some at the other. I object to all such dogmatic rules—never say this is the only way. Another man says the use of rubber for separation caused so much pain that he does not use it at all. Now, I use rubber in separating, and I

think I cause as little pain as anything he can use. But I do not always use rubber; I often use wooden wedges.

A man who inflicts unnecessary pain is a ruffian. Cotton is not of universal application. Often the teeth would not hold in enough cotton unless it was crowded up to the gum in the interdental space. One says hand pressure is the mode above all others. For twenty-five years I have used the mallet, and I know that I make better operations and give less pain than when I used only hand pressure. I have had my own teeth operated on, and I greatly prefer the mallet. The true philosopher examines all the circumstances, and is governed by environments. Study the case, make a diagnosis, judge of and be governed by the indications.

In separating, drive in a wedge very slightly; after a few hours, or perhaps days, you can double the wedge with no more pain than with the first. Take time; work slowly but certainly. If you force in a large piece at first, the constant pressure causes great irritation and severe pain, and the tooth gets too sore to work on. In these things much depends on the idiosyncrasies of the patient. Every case must stand on its own merits. You cannot be governed by dogmatic rules. I did not know that arsenic had ever been so generally used to destroy sensitiveness of teeth, as has been intimated, but I do know that arsenic kills the pulp, perhaps not immediately, but eventually. Chloride of zinc was used at one time, but it gave too much pain, and never became popular. Ether, used with a spray apparatus, will cool the tooth till it becomes benumbed and but little sensitive, though if continued long it will cause excessive pain. If the tooth is kept dry—and this is impossible without the rubber-dam—there will be less suffering than without this precaution. Absolute dryness is the most important adjunct in subduing the pain incurred in cutting dentine.

Dr. Crawford: When the use of arsenic prevailed so extensively, did those men not know that it would kill the nerve?

Dr. Morgan: I cannot say. If they had any understanding of the action of arsenic, they must have known it. Horse doctors cured fistula—"poll-evil"—by putting in a little particle of arsenic, which they knew would slough out the diseased tissue. I have seen it come out in a mass as big as your head. Yes, sir; dentists who used arsenic must have known its killing effect or been most ignorant, for even the horse doctors knew it was death to the soft tissues it reached.

Dr. Beadles: I did not say that other persons could not work successfully by other methods. I gave the method with which I had been most successful, and read the paper in hopes of inciting

a discussion, to bring out other methods. Dr. Morgan has jumped on me pretty roughly, but he has done me good. There was no intention of being dogmatic, except for myself. I made no rules for any one else.

Dr. Morgan: I would rather Dr. Beadles had not said I "jumped on him." I have a high regard for Dr. Beadles, and value him at his full worth. I would not for the world say anything to hurt him. But we want only the truth.

Dr. Friedrichs: God Almighty fortunately put me in New Orleans instead of in Nashville, consequently I cannot see things in the same light as our friend from Nashville. In regard to the use of the mallet, a lady came to me not long since to ask if I would fill her tooth without using the mallet; that I had filled teeth for her "before the war" without any mallet, and they were still good. The last fillings were put in with the use of the mallet and made her so nervous and ill that it was two weeks before she was able to sleep at night. That is the way patients look at these things. Hand pressure will spread the gold, but rapid blows with the mallet condense only the surface.

Dr. H. D. Boyd, Troy, Ala.: In reference to arsenic, as a curiosity I will state I have a tooth in my mouth to which arsenic was applied twenty years ago for the alleviation of sensitiveness in dentine, but that tooth is unquestionably alive now, as any one will pronounce who will examine it. In reply to questions, Dr. Boyd stated that the arsenic remained in thirty minutes, and twenty-four hours later the tooth was cut on the anterior proximal surface.

Dr. W. H. Morgan: That is only another proof that there are exceptions to all general rules—idiosyncrasies. We say that opium produces sleep, but that is not always so; there are people in whom it prevents sleep.

Dr. Frank Holland, Atlanta, Ga.: Dr. Abbott said that normal dentine is not sensitive. Now the worst trouble that I encounter is in cutting down a normal tooth for crowning. It is exceedingly sensitive when the dentine is struck, so sensitive that sometimes I cannot keep the patient in the chair. A perfectly sound tooth is the most sensitive tooth.

Dr. J. Y. Crawford, Nashville, Tenn.: The question is whether the dentine is normally sensitive or non-sensitive. I say the normal tooth is more sensitive in some individuals than in others. In an anemic condition there is a departure from the normal line, not alone in the denture, but throughout the entire nervous system. In the typical normal condition of the entire individual a man may go to sleep while you are cutting his tooth,

but take the city-bred neurotic, and there is such a keen dart of pain that you have to desist; even our most reliable local obtundents will not overcome it. Dr. Friedrichs says that his sensitive tooth is in normal condition. But Dr. Friedrichs is of such a highly nervous organization that I doubt whether either his heart or his respiration, or any of the tissues of his body, are normal.

Dr. Beadles: I rise to a point of order. The discussion has drifted to a point where it has no connection with the paper under discussion. Are we now to discuss the whole subject of operative dentistry?

The Chair: Dr. Foster's paper made comparison between two operations, one of which was painful, the other was not. The range of the discussion is not out of order; it is practically along that line.

Dr. Crawford: The position of the operator at the chair depends largely on his training. The man who plugs teeth using a high-low base chair, operates differently from one who learned while using a split bottom chair in the country. I do not have a stool or a mirror, it takes all I can do to use both hands for my instruments and stand up to it. The paper says use only hand-pressure, but in the process of the evolution of dental thought we have got beyond that. With uniform fastenings throughout the cavity, and combining non-cohesive gold with pellets of cohesive gold, you can make a plug that can be passed through a rolling mill and form a ribbon of gold.

Dr. Friedrichs: My poor tooth has been called in question again, as to whether it is normal or abnormal, but you have not examined it. Is my finger nail normal or abnormal? I call it normal, and I cut off the end of my nail and do not feel it. It is not sensitive. But let me cut too far down; it is still normal, but it is certainly very sensitive.

Dr. Morgan (to Dr. F.): Have you ever had rheumatism? I have never seen a rheumatic whose teeth were normal, as far as sensitiveness is concerned.

Dr. Frank Holland: I have some twenty rheumatic patients, and I am sure they complain less than many others. How can rheumatism affect the teeth?

Dr. Morgan: That may be so, and yet the statement is true.

Dr. Gingrick, Baltimore, Md.: How does Dr. Abbott know that normal dentine is not sensitive?

Dr. Abbott: No tissue is normally sensitive, but when irritated it becomes sensitive, and if sensitive it is abnormal. When you touch the dentine it is sensitive; therefore, it is abnormal.

Dr. Cowardin: Extreme sensitiveness of dentine is largely

due to idiosyncrasy. Rheumatics and gouty patients suffer most exquisitely. I have a friend thus affected—a physician—whose dentine is exquisitely sensitive, and it is also almost impossible to destroy a nerve without arsenic. It gives him most extreme pain for hours, though I use every method to relieve it. He had a tooth filled with amalgam by my assistant. In twenty-four to thirty-six hours he was suffering from neuralgia—tactile sensibility of the face; he suffered excruciatingly from simply touching the skin. He was heavily dosed with quinine, etc., for neuralgia. I inquired into the case (the nerve was not exposed in the tooth). I relieved him with aconitia. That case was one of gout—the uric acid diathesis. It is a difficult thing to form an idea of what normal dentine is. There may be peripheral irritation or systemic irritation. If systemic, then the dentine is not normal.

Dr. Frank Holland: What has the condition of the blood to do with it? A man with constitutional weakness is less able to bear pain; if he is hurt he will complain more, but no one can prove that there is any physiological connection between the rheumatic diathesis and the dentine of a tooth. Such a patient may complain more, but he does not suffer more!

Dr. Cowardin: No part of the body is in physiological condition in the gouty or rheumatic patient. The nerves are in a hypersensitive condition from malnutrition.

Dr. Frank Abbott: It has been asked how we know that normal dentine is not sensitive? Dr. Cowardin has said no part of the human frame is in strictly physiological condition in the uric acid diathesis. In opening into a sensitive cavity the first extreme sensitiveness abates as we go deeper, till soon the patient gets quieted and says it does not hurt; that is, when we reach normal dentine, pain ceases. As to how rheumatism affects the teeth, it is through the acid condition of the fluids of the body. If we can overcome that condition the teeth will no longer be sensitive. This is done only through constitutional treatment.

Dr. W. C. Barrett: Advanced histologists have accepted the theory that normal dentine is not sensitive. The normal dentine is not nerve tissue. It may contain the unorganized elements of nerve and other tissues, but it has no nerve supply.

You ask, then, how does abnormal dentine get sensitive. The protoplasmic elements get hyperenemic; they get inflamed. The first step is the breaking down or return to embryonal conditions; it becomes capable of or competent to respond to external impressions. But normal dentine is utterly and entirely without sensation. But few are aware that the pulp itself in its normal condition is absolutely without sensation. It is utterly incapable of

conveying the sensation we call pain. Pain is abnormal, and a symptom of diseased conditions. How often have you not wounded a pulp and the patient not been cognizant of the fact. You quickly cover and protect it, but if you allow it to remain exposed till it becomes inflamed, then it becomes exceedingly sensitive. The elimination of effete matter must be coincident with and coequal to the supply received; in pathological conditions, waste exceeds the repairs.

Dr. Geo. J. Friedrichs: Is this a hypothesis, or can it be demonstrated?

Dr. Barrett: It is simply axiomatic. No demonstration is needed to prove that two and two make four.

Dr. C. N. Peirce: The assumption is that normal dentine is not sensitive. But it is impossible to get in contact with the dentine in its normal condition, consequently, we do not know this. It is possible that in the middle portions there is no feeling, but in the interzonal layer we always get a response. Just as we pass the enamel, at the border line, a touch gives pain. To say that the pulp is not sensitive, seems absurd. We cannot touch a nerve without its conveying some impression, though varying in degree. Normal or not normal, terminal filaments are always sensitive.

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I have listened, and watched, and weighed carefully here, hoping to catch some inspiration. To go back to the papers—for days and days what pain we have inflicted with our rubber wedges, cotton separations, etc. I get along better now in separating teeth. I use the mechanical appliances for that purpose, with great satisfaction both to myself and my patients. Start the screw, and look your patient in the eye; screw it up a little more, till you see a look in the face that warns you to stop. Let up on it a bit and wait a little, and he will conclude, "it is not as bad as I fancied," and then set it up a little more. You can thus easily

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A candid comparison of these two statements, with a moment's reflection on the well-known popular estimate of the American graduate among the English public, will leave little room for doubt as to which one more fairly represents the true "animus" of the recent legislation; and it is highly gratifying to note that the well-known love of fair play, which is such a prominent trait of British character, has found an advocate among their own journalists, while the editor who dissents from the opinion expressed about the "inconvenience" of American competition, and calls attention to the hardship which "was pointed out" as likely to befall the "stay-at-home brother" student of him who might go abroad to graduate, may be reminded that it is not the usual custom of those who seek "protective legislation" to point out too clearly their most potent reasons for urging its adoption.

But to return to the dental laws of our own country. How can we justify a law in Massachusetts, New Jersey, Colorado, or the State which now entertains so many of us as her guests, which accords no recognition to a diploma, and will recognize no certificate from another State Board of Examiners?

These laws have been the cause of hardship and oppression to worthy persons, and they have not occasioned any higher standard of attainment among those who practice under them; neither have they better served to rid the communities from charlatans, than the laws which are more lenient toward regular graduates. We are glad to hear it announced that the National Association of Dental Examiners is to take some action on the subject this present summer.

Dentists generally claim that their profession is a progressive one; and that the college is an obvious need, calculated to contribute to its progress. "Our colleges, our journals, and our associations," said the presiding officer in the largest dental meeting ever held, "constitute the great tripod on which all professional advancement must rest."

We are opposed to the feature of some laws which deprive the college faculties of the right of determining when their students are competent to practice, by decreeing that no graduate shall commence practice without first submitting to an examination by a Board of Examiners. We believe an adherence to that policy will lower our colleges and their graduates in the eyes of other nations, and thus rob us of that pre-eminence which American dentistry has so long and so justly held abroad. It will perpetuate a bitterness, and foster a tendency to mix methods which belong more properly to the realm of politics, into our professional relations.

When one State admits graduates to practice without an examination, and another does not, they cannot both be right. The true issue is, which measure will better serve the interests of whom? The dentists of the State, the few who frame the law, or the colleges? No! Of whom, then? The people of the State.

We have failed to meet with one single good argument in favor of the exclusive style of dental legislation.

Let all who feel disposed to support exclusive laws, stop a moment, and consider how they are regarded by some of the grandest and most venerated men in the profession. For example;

at the late meeting in Washington, one of the fathers to whom we all look with pride, a man who wears his snow-white locks with that noble grace which is only born in the consciousness of a well-spent life, and of whom a brother of equal age said publicly: "If there be an honest man in this District, there he sits." Said, in discussing this subject: "When a man receives his degree from an institution chartered by law and empowered to confer degrees, he is legally graduated and authorized to practice. To demand that he shall be re-examined before being allowed to practice, is an insult to his *Alma Mater* and an imposition to which no man should submit." We are proud to express our satisfaction at finding ourself in such company.

Admitting the need of education, where is it best to be obtained? How and by whom shall it be determined, when a student has attained it in a degree sufficient to fit him to engage in practice?

For many years after the establishment of the colleges, these questions were regarded as settled, and the immense influence thereby disclosed in the rapid advance of dentistry is known to all.

But now we have a new phase of the question: Shall these educators of our students decide their qualifications, or shall State Boards? Until it can be proven that the colleges fail to furnish needed instruction, and that the State Boards are superior judges of students' qualifications, the claim set up for the great need of such bodies to review and verify the work of the colleges is unproven. The profession, after having waited long, will soon demand the proof. The established and recognized institutions of learning must stand, and their certificates, subject, possibly, to some reasonable oversight at the time, or directly after they are granted, must be accepted.

Dentistry is called a liberal profession and has a code of ethics. But some provisions of dental laws conflict with requirements of this code. Either the code must stand, or the laws be modified.

Speaking editorially of an able article on "Professional Ethics," the *Dental Cosmos* said, about a year ago: "The majority of writers on dental ethics have written apparently in the belief that the conservation of the interests of dentists as a class, was, or unquestionably should be, the first concern in any ethical formula pertaining to them. The same idea has largely colored the efforts which have been made with respect to dental legislation. In the latter case, all attempted efforts at dental legislation, based on proposed benefits, primarily to the class, have generally failed; because such legislation is repugnant to the spirit of the common law, whose avowed object is the conservation of the interests of the community, and not the class elements, which are tributary to it."

The article to which this editorial referred described ethics as "the art of forming, or of guiding, or of forming and guiding human character;" and stated that "the end sought by ethics is the welfare of society;" and while he explained that there was a subdivision known as "class," or "professional ethics," the author showed clearly that the cardinal principle laid down governed throughout; for, he said, "no society, no ethics;" therefore, a

comprehension of the foregoing will materially assist in estimating the degree of divergence of certain laws from the true ethical standard. If a law designed to limit its benefits to one class be "repugnant to the spirit of the common law," how much more so must it seem when shown to have a tendency to confine those benefits to but a part of a class, as those who may have commenced practice prior to a given date, or the citizens of one country, to the exclusion of others; and when, to all this is added, a most conspicuous neglect of practical provisions to conserve or promote "the welfare of society," in return for the self-appropriated benefits, what is there left of such a measure to defend?

Can an educated and reputable dentist fully discharge his duty toward his community, when he gives his support to a law which prescribes, that all who may wish to share in the privilege of practicing in that community must undergo an examination, which might prove unfair to a more able man than himself; but, which does not even inquire, whether those engaged in practice are honest and reputable practitioners, or, if they follow methods, which, if adopted by attorneys, would secure their disbarment, or, if pursued in medical practice, would cause them to be classed with the voodoo dotors and abortionists?

A man who, in early life, has testified to a proper regard for his profession by entering it "through the door of a reputable and established college," and who has passed years in honorable, conscientious and successful practice, has established a claim on the profession which they should cheerfully recognize. Though such a man generally ends his professional, and his earthly, career in the community in which he has been long established, the exigencies of life, and the force of circumstances, will sometimes force him to change his location; and any law which imposes on him an examination which might embrace questions that only a college professor or a student fresh from examinations could answer, and which have been known to force a member of an Examining Board to consult the text-books, or which would authorize a prosecution —nay, persecution—in case he should pass into an adjoining State, is not in keeping with the spirit of these days.

In the impartial manner in which the dental law of Pennsylvania is contrasted with the medical law of that State, in the *Cosmos*, its defects are so clearly set forth as to render their defense practically impossible; and while the legal right of the State to enact any laws which may be deemed proper is supported in an argument which may indicate a leaning toward an exclusive law against college graduates, the tone of the entire article is so fair, and gives such positive evidence of a desire for clean and honorable legislation, that it must command the respect even of those who may hold different opinions.

The profession stands to-day in a position of peculiar interest, for by the record of the present you will be judged by posterity. The century which gave birth to modern dentistry, and which has witnessed in it a growth unprecedented in the history of all professions, draws rapidly to its close, and those who fill an active place in the profession now will occupy a conspicuous one when the history of the present shall have been written.

Standing, as we do, on an eminence, we may contemplate the path up which our profession has made its wonderfully rapid ascent, and see the milestones along that royal road for the guidance of their followers, ornamented by the names of men who have labored well and faithfully for the elevation of our calling. Brightest of all among them will shine the names of the fathers, of our system of education, and the pioneers who spread our professional fame around the world; but where is one name that proclaims a wise and great lawgiver? Consider this; look forward into the dawning of the twentieth century and contemplate the advance which dentistry will make to the yet higher and broader plain which it is destined to occupy.

I am filled with an abiding faith "that before the first sunrise of the coming century the honesty, the true professional spirit, and the sound common sense of our colleagues, the world over, will have swept aside every clumsy and ill-advised measure calculated to retard our healthy growth, and dentistry will continue in the vanguard of the liberal professions, dispensing its blessings with an ever increasing bounty.

The subjects of "Dental Education" and "Dental Legislation" were then declared open to discussion.

Dr. C. N. Peirce said that he did not feel that he was entitled to the honor of opening the discussion of a subject of so much importance. He felt that while incompetent to deal with the papers presented, he must dissent from much in each of the last two papers.

The first paper was pleasing, from the manner in which it handled the subject of preliminary education—the foundation on which is to be raised the structure of all further education. When we open up the question of dental legislation in the different States, whether undergraduates shall be admitted to practice, etc., we strike a different phase of the subject—the first query is: What is the meaning of dental legislation? What is its purpose? Why do we have these State laws, and what is the outcome of all this? Is it for the benefit of the profession, or of the individual? There must have been some reason for the inception of this legislation. It cannot be entirely without foundation. In this country there are about forty dental colleges, and charters granted or asked for nearly as many more. What does the public, what does the profession see in all this? It is certainly a condition of affairs to be deprecated. These institutions are not endowed, but rely for their support on the number of students they can attract within their walls. The only compensation the teachers in these institutions receive is the fees from the students, say there are five professors, and, perhaps, ten demonstrators to each college, what is the inference? Do they say to the student, "Come to us and you will get a diploma as soon as possible?" The inducement should be an education and a degree, but all the schools cannot get enough

students with these inducements only, and some said we will give you the diploma without the education, and that laid the foundation for our dental laws, and of the National Association of Dental Faculties. I say this as the result of forty years' experience in teaching students from all parts of the country. If every man desiring to enter the profession of dentistry could go before an Examining Board so constituted as to be entirely impartial—above suspicion—without possibility of partiality—have his papers examined and placed on record, such an examination, and such a record would stand for something, but that is in the future, it must come, perhaps within five years we will see it. Our present dental laws are in the line of progress—gradually we are working up to ideal conditions. The schools should be the creators of students, not grantors of degrees. In the German schools, if a man wants to teach he gives his lectures, and if they are acceptable he gets his class, but degrees are granted by another institution. Many men are born teachers. In Germany the idea is that he who is qualified to teach teaches, and students who choose to do so attend his lectures. If he desires to study dentistry he listens to the lectures of the one best qualified to give him instruction. In a class of two or three hundred students it is impossible that all should be equally studious, but some may be very sharp—some may get through and know but little. This cannot be avoided. It is the inevitable result of the conditions. Some students get the degree without being qualified for it, but the only wonder is that it is not so more frequently. The disposition now is not only to raise the standard of preliminary education, but also to extend the period of study so that graduates will be so thoroughly proficient they will not have any fear of going before any Examining Board. We will have such legislation on the subject that there will be no unfairness to students.

Dr. B. H. Catching: I love to listen to the broad-minded views of a man like Dr. Peirce. He takes the right view, and we are bound to recognize it as such. To answer the papers that have been read would require a book to be written. Their length was their most prominent feature. If you do away with the State Examining Boards you would do away with half the patronage of the colleges. The schools and the boards go hand-in-hand.

The idea that the board is a small ring formed to protect itself and not allow any one else in is too contemptible to be repelled. A first-class dentist college graduate need have no hesitancy in going before a State Board. They need have no fear if they are competent. As a rule, Examining Board questions are along practical lines—fair and easy. Because there have been a

few foolish questions, that should not condemn the whole system. I repeat, to blot out the Examining Boards would deprive the colleges of half their patronage.

Dr. R. R. Freeman: There are conditions we must meet. As to preliminary education, it seems a hardship to turn back a young man because he has not had a required amount of education. In my day the demands were not so rigid, but I have always done the best I could. Yet I have always suffered from the lack of that early preliminary education. Give the young men all the education you can; force him to think; it will make him useful and beneficial to humanity, and he will thank you for it. We call ourselves a liberal profession, but we have not attained the position of the liberal profession of law; they are able to make themselves felt. If we would obtain like recognition, we must enact laws that shall be for the best interests of the whole people. A man who is guilty of malpractice in law is subject to disbarment; he is turned out. We should have the same feature in our laws. It has been said here that if we disband the Examining Boards the colleges would lose their patronage. We should be above such selfish aims and look only to the best interests of all concerned. If the colleges can't get students, then the students don't need the colleges. If there were fewer students the professors would have better opportunities to know what the student is worth and what he is. A young lawyer goes before the bar and shows what he knows. He is not examined, but he gives evidence what he is before the proper tribunal. If he is not what he claims to be, he is disbarred. Why not so in the dental profession?

There is a spirit of unrest, an unsatisfied condition, that is working toward the advancement of humanity. We must have clean hands and a pure heart. Men must learn that to do right and attain skill is the only way to attain prosperity.

Dr. McKellows: I have not language to express what I feel on this subject of dental education. I sprang from nothing; I educated myself; I am proud of my profession, but not of our colleges nor our laws. The States refuse to recognize the college degrees; one State refuses to recognize the license granted in another State. England is not to be blamed for doing the same thing. Give us a law to govern the colleges and make the professors teach the students. We want a law to govern the schools. There are forty schools. If a man can't pass in one, he finds another where he can pass. If he can't pass the board of one State, he goes to another where he can pass. It is not a good law; it is not that way in the legal profession. A license that is good in one State should be good in every State, and that is

what we must have. I go the world over and I watch things carefully. It hurts me to see men jump on England. It is not half as bad as the action of one State toward another. In England dentistry and medicine stand hand in hand. The dentist's standing there is higher than anywhere in the world. We want to elevate our standing. It will give us a spirit of manhood to stand abreast of the legal and the medical professions; and we need no better standard than they have, which is merit not measured by time of study.

Dr. B. B. Smith (Florida): I am a new member of this Association, but I feel it my duty to say what I can to advance the interests of our profession. The real cause of the recent action of England toward American dentists has been over-looked. (Dr. McKellops: It is because American dentists go there, and lecture and advertise, and lower us in the eyes of the world. They give public clinics, and invite everybody to come in, and charge for them. These public clinics are a stigma on American dentistry.) The condition of things is deplorable. I am in a position to know. The dentists from the United States who go to England are not of our best, they are not members of our societies. While the best dental education in the world can be had in the United States, England is jealous of that fact. But the American dentist in Europe is not the representative American dentist as known in the United States. (Dr. McKellops: Some of them are representative men. I know them.) The State Examining Boards are impartial; they have nothing at stake; they stand between the quack and the public, and the public is entitled to that. The public is not capable of knowing who is competent, and who is not. A college diploma is not always the reward of merit. Many get through who are incompetent; they work through on the work of others. As I see it, Examining Boards do not go far enough in examining candidates who come from the colleges. If they are not competent, they should be thrown. Every one should be forced to prove his efficiency to practice, not merely his knowledge of theory. The ability to practice is what the public needs —not the gift of gab. I, for one, am in favor of Examining Boards; and let them give every candidate a fair examination. When State Associations and State Examining Boards meet in joint session there is abundance of clinical material, and each one should prove his qualifications for the practice of dentistry, not only in written papers on theory, but by practical demonstration of his ability to perform the operations required in daily practice.

Dr. J. Y. Crawford, who took the floor, was interrupted by a motion to adjourn, which prevailed.

8.30 P. M,. Friday, August 3d.

Discussion of "Education and Literature," continued.

The Chair requested that speeches be limited to five minutes, and no speaker on the floor more than once, until all have had an opportunity to express their views. (This ruling was not adhered to, the time of several speakers being extended by unanimous consent.)

Dr. C. N. Peirce: I have reason to believe I was misunderstood when I spoke on the subject of Examining Boards. I believe we are in a transition stage. The boards are one of the steps in the evolutionary process, though they have not proved themselves equal to the task. They must be empowered to give a degree which shall be recognized in every State in the Union. This point must be reached before they shall have accomplished all that is to be desired.

(The Chair here appointed Drs. W. R. Clifton, J. S. Thompson, and J. R. Woodley, a committee to examine the treasure books and accounts.)

Dr. J. Y. Crawford: We have with us a gentleman of prominence, whose national reputation entitles his views to consideration. Allow me to resign the floor in favor of Dr. W. C. Barrett, of Buffalo, N. Y.

Dr. H. J. McKellops: We would all be glad to have Dr. Barrett expound the position of the State of New York on these questions. By many it is not clearly understood; and we would like to be able to judge of what would come of it, if every State in the Union should take the same attitude.

Dr. W. C. Barrett: I suppose it is generally agreed that, in principle, an Examining Board in each State is desirable. The character of the board in each State, and in all the States, should be such as to commend it to the confidence of all who are above suspicion for honesty and capacity. By the laws of the State of New York, the University of New York has entire control of all educational institutions above the grade of the common school—the higher academies, universities, and professional schools. What is the University of New York? It is not a teaching institution; it is a federation of all the teaching institutions represented in one body. Its fundamental powers are relegated to the Board of Regents of the University, elected by the State Legislature, the same as United States Senators are elected—by the votes of the State Senators and Legislators in joint session. There are nineteen in all, who are elected for life and who serve without compensation. It is a body which is beyond all political influence. They are selected from among the men of the highest character; men who

are devoted to the interests of higher education. It has a supervisory power over the higher education in the State. It grants all charters and revokes charters; it grants the degrees for the educational institutions in the State. It is a federated body of the five hundred educational institutions. It is a supervisory, not an educating body.

By raising the standard of higher education, we believe it is a long step in advance. This body has a system of Regents' examinations. Examinations in all the different branches of the various schools are held by different committees appointed under the direction of the Board of Regents. This is so thoroughly systematized that there is no possibility of, nor has there ever been charged, any suspicion of collusion or of evading the requirements of the Board of Regents. An examination passed in any of the different branches, whether Greek or Latin, French or German, geometry or trigonometry, receives a given number of marks. The examination is rigid, and there is no fluctuation of the standard. The number of marks required on each branch must be attained to receive the Regents' certificate. Now, in regard to the professional schools: A standard of preliminary education is thus established which must be attained before matriculation is possible in any professional school, whether of law, divinity, or medicine. To matriculate in the Medical College of New York a student must have the Regents' certificate of a certain degree of proficiency. The Dean has absolutely no discretion. Without the Regents' certificate he cannot matriculate; with the certificate he must accept him; and when the student has graduated from a professional school he does not receive either diploma or license from that school—he must go before the Regents and be examined, by a board appointed by the Regents, before he receives his diploma or license to practice. He matriculates and goes through the curriculum of the professional school, and then he is examined by the Regents of the University for his diploma, degree, or license to practice.

Within the past year the dental schools have been incorporated on precisely the same lines as the medical schools. A dental student, before he can matriculate in a dental school, must have the medical student's certificate of the same preparation, through the same curriculum—anatomy, physiology, chemistry, etc. The examination is exactly the same in these preliminary branches.

The Board of Regents grant all charters, and can revoke any charter. No charter is granted to a medical school that has not the sum of $500,000 actually raised and deposited, as an endowment fund, before a charter is granted empowering to grant degrees.

That is the unalterable, inflexible rule. On the first day of

August, 1894, these regulations went into effect for schools of dentistry. After that date no Dean of a dental college can matriculate a single student without the Regents' certificate. He has no power without the properly authorized credentials, showing the requisite preliminary qualifications. The Regents have provided for examinations for those outside of the State who signify a desire to come under these regulations, and information is given as to how the Regents' certificate can be obtained. A student from outside may matriculate, but within a given time he must present the Regents' certificate, or his matriculation is void. Thus it will be seen that all discretion of preliminary qualifications is taken entirely out of the hands of the colleges. The rule is unbiased but inflexible, whether the student is for the school of medicine, dentistry, law or divinity. Thus it will be seen that a professional school in the State of New York must walk pretty straight, as their charter is liable to be revoked for any irregularity.

For awhile the dental schools of New York will be placed at a disadvantage, compared to those of other States, in the number of students admitted, but gradual preparation for the change has been provided for, and in the end it will prove of great advantage in the advanced standing attained, and will undoubtedly work for good. The schools have unanimously accepted and welcomed it, for they recognize that the recompense will come in the end in the advanced status they will have acquired.

A graduate of any New York school hereafter cannot practice in the State of New York till he has passed the Regents' examination, by a board appointed by the Regents; and this board is very different from the Examining Boards appointed by the Governor, for it can have no political significance. It has never been whispered that any Board of Regents has in any way been influenced by politics. They are entirely above suspicion. The standard is unbending, unvarying, unbiased, permanent in its results. This action of the dental schools will redound to the credit of dentistry; it will make us a profession, not a specialty of medicine, but a profession in precisely the same status as medicine, law, divinity, and all other learned professions, on the same basis as medicine and with the same preliminary qualifications for matriculation and graduation, a standard that cannot be lowered. It is taken entirely out of the power of the schools; they can educate, but they cannot license to practice; they cannot even accept a student independent of the university, in which the whole world has entire confidence. The dental schools are now one of the federated bodies of the University of New York, which, as was said, is not an educating but a supervisory body.

Dr. John S. Marshall: When I lived in New York, the Regents' examination for a teacher's certificate of the first grade was not above the equivalent of the second grade in a High School. I would ask if it is now of a higher standard?

Dr. Barrett: The Regents' certificates are given in all grades except below the academic. The certificate is according to the standard attained, whether first grade, academic, or, if higher, the collegiate, etc. There are examinations in Latin, Hebrew, French, or a student may take a special course examination. But whatever the grade, the standard is high and rigid.

Dr. Frank Abbott: Some of the statements made by Dr. Barrett need modification. The University of Buffalo has only affiliated within the past three months. I have been connected with the university for more than twenty years, consequently I know more about it than other men connected only with dental schools. The Board of Regents has representatives from all the schools under its jurisdiction. Representatives from the higher academies and from professional schools are invited to read papers, assist in discussions, etc., tending to the elevation of the standard of education, and in the line of advancement. The Regents' certificate is required for admission to all professional schools. A medical student must have a Regents' certificate for matriculation in a medical school. (Dr. Abbott here explained in detail the system of marking in the different grades, from academic up; also the financial system, or monetary reports, made by the schools to the Board of Regents; the system of conferring degrees and license to practice; and some contemplated changes in the law.)

Dr. Barrett: When the Board of Regents determine upon any changes in these matters they have to go before the Legislature, but the Legislature always passes the law as requested by the Regents.

Dr. T. B Welch: When I graduated from a medical college, forty-three years ago, there was in the class a gentleman who had been only four months in the medical college, a graduate of a civil course college and well read in medicine, though having been in a medical office only six months. He frankly stated these facts to the Examining Board of the Board of Regents. They took us in hand and said: "Now, boys, we have no written questions; we are not going to put the screws on, but we will have a general conversation. We do not ask you where you got your information, or how long you were in acquiring it. We shall soon find out if you are competent. If you stand our examination, we will give you a certificate. If not, whether you have studied one year or ten years, you will not get it."

Dr. McKellops: I have listened carefully to Dr. Barrett and to Dr. Abbott, and have learned what they do with dental students in New York, and how they are licensed to practice in New York, but with all that wonderful system, if one of those same graduates goes to Illinois, or to any other State, he has got to be examined again before he is permitted to practice. And England only does what is demanded in every State in this country. Then why should we hurl stones at England, and why should such articles be written and such papers read when England is only doing just what every State here at home is doing? No people are trying harder than England to elevate the standard of dentistry; they have none of that mean little feeling that exists here. In our own country we are raising stumbling blocks; every State is arrayed against every other State, and every college against every other college. There should be a general law to regulate these things. What is the meaning of all these colleges? It is simply to get every one as a professor, and take away all the poor patients from the poorer dentists, and make all the money themselves. Committees should be appointed to visit the colleges and look into their manner of doing business. I have got good eyes, and I see into some of these things.

Dr. T. B. Welch: I am an Englishman, and I love England. Until very recently Dublin passed American applications for degrees by only examinations, but England's Medical Council Board objected so strenuously that now it does not do it. You cannot practice in England unless you get a degree from their Medical Council, and there is not a dentist in that Council Board. You must go to the hospital and pass two years there, just as though you knew absolutely nothing about dentistry. If I am not correct, I would like to know it, but I think I am correct.

Dr. McKellops: You tell me that an American cannot go to England and pass an examination there. You are radically wrong.

Dr. Welch: I think I am right in the statement I made. We are above them in our standard. Their first year in the hospital is only on theory. The next year you practically begin dentistry.

Dr. W. H. Morgan: I do not understand how the Regents' examinations are conducted. It would be something immense for those nineteen men to examine all the students from all the schools. How is it done?

Dr. W. C. Barrett: I will try to be concise in replying to Dr. Morgan's questions. The examinations are not conducted personally by the Regents, but by the Regents' Examining Board For the examination of medical students each school of medicine

has its representatives on the Examining Board—three regular practitioners, three homeopaths, and three eclectics—but these representatives are not teachers in the schools. They report the results of their examinations to the Regents, who grant the licenses.

I think Dr. Welch is mistaken, and that he does not understand the English law in this matter. We acknowledge no English degrees, and we cannot expect them to accept American degrees.

Dr. W. H. Morgan: As far as I can understand it, I think the New York University system is open to harsh criticism. Do you say there is no politics in it? No possibility of fraud? That everything is perfectly clean and honest? I have been taught from my infancy that a corrupt fountain must yield a corrupt stream, and if there is any cesspool more corrupt than your Albany politicians, as shown up in your own newspapers, I don't know where it is. How can a pure stream flow from such a fountain-head? The Regents are elected; it is considered an honorable place to occupy, and there is bound to be all the wire-pulling and chicanery that attaches to such offices. There are men who make it a profession to corrupt legislators, and barrels of money are spent in such business.

Dr. Barrett: It was stated that these men serve for life without compensation.

Dr. Morgan: Yes; and there are men who will pay more for honors than for the dollars there may be in it. Is a Board of Regents elected by such a Legislature competent to select a committee to examine students of theology? I will lay down one axiom in regard to examinations: the further you get the student from his teachers the less reliability is there to be placed on the result of the examinations. How are those Regents made competent to select subcommittees to examine students in theology, or medicine, or dentistry? What guarantee is there that they know anything about the qualifications for the practice of medicine or dentistry? We don't need to talk about England. We have a little job of our own on our hands, and it is enough to have to air our own dirty linen without going abroad for more. Let them do as they please and we can do as we please. We do not ask any favors from England. That is all I care to say about it.

Dr. Barrett: It is useless to argue against any man's prejudices. Is Dr. Morgan familiar with the work of the University of New York? It has been in successful operation for a great many years, and there has never been a whisper of suspicion against its purity until to-day, and that from a man who is evidently totally ignorant of its workings.

Dr. Morgan: Is it not a fact that it is a part of the State government; that the Legislature elects the Regents, and that they delegate

certain important powers to others? The Regents are elected by a Legislature whose character is notorious. I am just wondering how many of the scallawag doctors that infect the South got in by that door? I know that some of our very commonest boys have gone to New York and soon came back with diplomas.

Dr. J. Y. Crawford: I had hoped that the distinguished gentleman from the great State of New York would have thrown some light on the great questions before us, but I fear we are only the more hopelessly mystified, and the solution of the question of dental education in this country is not yet reached. If this university system of New York, with its Board of Regents, etc., has been so remarkably effective for these many years, it is strange that it has not been made known to us before. There are, I am certain, many here who never heard of it before to-night. We have listened to some admirable papers; that of Dr. Noble is unique, but it offers a solution of only one point. To solve the difficulty we must meet all that is involved. There is one weak point in Dr. Noble's paper. In regard to his suggestion of having the college faculties represented on the State Examining Boards, I will say that the presence of a college professor on an Examining Board vitiates it and deprives it of its functions. I have been on our own State Board of Examiners, but when elected to a place on the College Faculty I vacated the former position. I cannot serve in that dual capacity. I am disqualified by the action of the Supreme Court. No man can serve on the Board and on a College Faculty. What is the rational, just, philosophical and true solution of this question? We have in each State a legally qualified board to pass on the reputability of the dental institutions of this country. When a State Board has passed upon it, and has decided that it has fulfilled every requirement, then the diploma of that institution should guarantee to its holder the right to practice anywhere in this country. That is only right, and it meets with a responsive echo in every heart. If the question can not be solved in that way, it will never be solved. There are other questions of great interest involving modifications of the laws, and the mode of enforcement. But we are more interested in getting some additional statutes on to the books than in overhauling those we have. Some of the States have recently enacted the law that when a man is guilty of unprofessional conduct he can be deprived of the opportunity of continuing such nefarious conduct. If, as a people, we are capable of self-government we can get on the statute books all that it is right to have there. Let us unite in solid phalanx on this question. I have all confidence in the integrity and the patriotism of our law makers, and I

believe we are capable of self-government. If it is right to disbar a lawyer if he falsifies his word, or defaces the record, then it is right also to revoke the privilege of practicing dentistry if a man is proved guilty of unprofessional conduct. We should have a law to stop it. As an humble representative of the dental profession of Tennessee I say that if every dentist would unite in a request to the Legislature to put such a law on the statute books it would be done, and that is the only way to put a stop to charlatanism. No man should be admitted to the dental profession unless he is fully qualified to practice dentistry, and when he has complied with all the requirements of the profession that should put him in *statu quo* in every State in the Union. If he is able to pass in that State which first put a dental law on its statute books, he is good enough to practice in the State of New York with all its Board of Regents of the University of the State of New York. Right will prevail.

Dr. W. H. Morgan: Kentucky has a law disbarring a medical man if convicted of malpractice and open violation of the laws governing the practice of medicine. It is in the hands of the board to do that thing.

Dr. L. Ottofy: The States of this government are sovereign States, and it is impossible for Congress to remedy the present state of things. The remedy is only to be found in the Legislature of each State. As the poor laws we now have have been copied, one from another, with some modifications, so better laws will probably be copied in the same way, but each State must independently improve its own laws. The remedy does not lie with Congress.

Dr. Edwards: It is a simple matter for each one to learn what the educational system of the State of New York is. The Board of Regents publishes annual reports, but it is useless to discuss the system when so few know anything about it. I will say, however, that the men composing the Board of Regents are all men of the highest reputation and authority on educational matters. If there have been errors in regard to medical students it is, perhaps, because they have not had the medical schools long enough in charge. The system is not yet perfect. In dentistry, since the establishment of the first dental school in Baltimore, step by step, advances have been made, and this alliance with the Board of Regents of the University of New York is a very important step in advance. I can get the degree of A.B. from what is considered a reputable school without going there, except to receive the degree. In New York the same degree requires attendance upon lectures for eight years. Between those two extremes we find all degrees.

If the board examinations were the same in all the States as in New York we would have a revolution in many college faculties. I hope we will some day secure such a board of control in Illinois!

Dr. Sweeney being called on to close the discussion of his paper, said the shortest way to get through with it would be to reply in rotation to those who had criticized it. Dr. Sweeney then endeavored to clear himself of Dr. Peirce's accusation of having failed to understand the *Cosmos* editorials; apologized to Dr. Catching for the length of his paper in view of the lateness of the hour and the temperature of the hall; denied any intention of "throwing bricks," etc. In regard to the muddle with England he thinks we need a system of international ethics. He believes Dr. Welch correct in the idea that any one holding an American degree, or half a dozen of them, would have to go over the whole ground in England before being allowed to register, and as long as he is not registered he is not allowed to practice. Dr. Crawford in clear and elegant language had covered the ground entirely of what he had tried to say. He failed to see why it should be impossible for us to attain such a high degree of excellence that the license of our board will be recognized by all others. The only point is to raise the standard sufficiently high.

Dr. Noble, in closing the discussion of his paper, said that any State was competent to enact a law qualifying college professors to serve on Examining Boards. He himself had served on an Examining Board with a teacher from one of the colleges, and had found that he was able to give the board valuable information and assistance. It would be a source of pride to the colleges to have a representative on the board to see that their work was up to the standard of their fellow-men on the board.

After announcement of clinics Saturday morning, the Association adjourned to 2.30 P. M.

August 4th, the Auditing Committee reported:

We have examined the books and accounts of the Treasurer and find them correct.

W. R. CLIFTON,
JOS. R. WOODLEY.
Auditing Committee.

A petition was received from a gentleman from Washington City desiring to become a member of the Association, but whose presence was prevented by the sudden illness of his wife. Action was deferred in hope he would be present later.

Dr. H. E. Beach, Treasurer of the Association, presented the following report:

To balance on hand last report	$290 27
By cash paid out as per vouchers	144 23
Cash on hand	$146 04

This does not include receipts of dues for the present meeting.

The report was accepted and ordered published in the *Transactions.*

Dr. Sill offered a partial report on appliances, exhibited in connection with the clinics.

Dr. J. Y. Crawford described Dr. Gordon White's new circular saw as a valuable adjunct to the operating case, which all would do well to secure. It is designed for finishing proximal fillings, and works well between the teeth.

The question was asked whether these appliances had been presented to the Association or were merely a part of the stock-in-trade of the dental dealers? Dr. Crawford and Dr. Sill replied that they had been on exhibition where all could see them, and that many had been in use at the clinics.

Dr. Geo. J. Friedrichs, New Orleans, read the following paper:

DENTAL CARIES AND POPULAR FALLACIES.

The little attention paid to teeth and their diseases, in a medical curriculum, leads me to believe that a paper on this subject will prove of interest.

Caries, the principal disease of the teeth, has existed in all historic ages. No race seems to have been exempt; all have variably suffered from its ravages.

Caries is produced by a chemical disintegration of the elements of the teeth. It begins on their surface, usually in some pit, fissure, or other irregularity, at the point of contact of the proximal surface, and about the necks of the teeth. When once begun, the destructive process spreads toward the interior; and as dentine is more readily effected than the enamel, a cavity is formed whose interior is larger than its orifice. If this process is not arrested, the whole crown of the tooth is ultimately destroyed.

When the molecular motion theory of Baron Von Liebig on fermentation was superseded by the brilliant experiments of Pasteur, a new light dawned on the problem of dental caries; for Pasteur conclusively demonstrated that neither fermentations nor putrefactions could progress without the presence of organic germs. Drs. Underwood and Miles, in a paper read before the International Medical Congress, London, in 1881, entitled "Effects of Organisms on the Teeth," summed up the following conclusion as the result of their experiments: "We consider that caries is absolutely dependent on the presence and proliferation of organisms. That these organisms attack first the organic material, and feeding on it create an acid, which removes the lime salt; that all the differences between caries and simple decalcification by acids is caused by the presence and operation of germs. That suppuration of the pulp, and its sequele, such as alveolar abscess, depends also on the baneful working of organisms. We feel justified in concluding that the successful exclusion of germs would prevent the disease."

Other investigators have confirmed these views, yet notwithstanding this plausible theory, which accounts for the general cause of caries, there remains a "missing link," the germ theory does not solve, and that is what is called "dental erosion," a disease where the wasting of tooth substance takes place without an apparent cause; it sometimes attacks only one tooth in the arch, whilst the rest of the teeth remain intact and unaffected. It attacks both the enamel and dentine. Its favorite field for action is the labial and grinding surfaces of the teeth, and generally leaves the eroded surface smooth and polished. When it attacks children's teeth it is generally confined to the incisors of the upper maxilla.

By most authors this disease is denominated green tartar. At first, it is a mere stain and of a greenish color, hence the name; when the enamel becomes disintegrated the lesion follows the ordinary course of caries. In adults, when it attacks the bicuspids and molars of the lower maxilla, the eroded surface is usually painful to the touch and extremely sensitive to thermal changes.

Antagonism is an essential factor of human existence. Motion and life can not go on without it. While the most active force of the building up process is going on, the opposing force or breaking down is equally efficient. Therefore it is only when these forces diminish in activity that there is an arrest in dental caries.

The predisposition to caries diminishes as age advances. One of the reasons for this is that by the time a person has reached the age of 18, all points favorable to decay have been attacked, and as we advance in years the teeth themselves become more dense and are better fortified to resist the inroads of decay.

The remedies employed to stay the progress of dental caries are mostly mechanical. Where caries is superficial, it is sometimes only necessary to polish the surface so as to leave a self cleansing space. By the application of nitrate of silver a covering film is deposited which arrests its further progress, provided there is no depth to the cavity, so that no extraneous substance can remain to dissolve the film by the process of fermentation.

In the disease called green tartar, if applied in its incipiency, nitrate of silver acts as a specific. I have used it for this purpose in my practice for twenty years. In 1879 I read a paper before the American Dental Association on "Erosion of the Teeth," in which I made the following statement: "Erosion of the enamel can be cured. The agent to accomplish it is nitrate of silver, for when applied to an eroded part of a tooth it puts forth its fiat and says, 'So far shalt thou go and no farther.' The salt, when brought in contact with the organic matter of the teeth, is decomposed; the oxid of silver is deposited, an insoluble and inert substance, which protects and relieves these portions of the teeth of their hypersensitiveness, antagonizes the action of the morbific influences, and assists nature to arrest the disease."

My paper was received with indifference and doubt, yet singular to say, when twelve years afterward this same truth is rediscovered by a Dr. Stebbins, and brought before the same Association, the truth of the statement is acknowledged, with a proviso: that it was "nothing new under the sun," for every mother's son of them had made use of this agent for the same purpose for the last forty years.

To arrest caries, the decay must be thoroughly removed and the cavity filled with an inert and indestructable material. It must be packed solid, so as to render it impermeable, and secured in such a manner in the cavity that

force will not dislodge it. The material must be left flush with the orifice of the cavity, and finished so that it can be kept clean.

This process of filling is the most important in the salvation of carious teeth. An incompetent who palms himself off as an operator is worse than a thief. A thief steals only my purse, while an incompetent dentist takes my money and destroys my teeth.

It is often amusing to listen to the views expressed as the causes of dental decay; some will put the blame on creasote. Says one: "I never had decayed teeth till creasote was applied to relieve pain." Others accuse sugar for the bad condition, especially of children's teeth. The preparation of iron, medicinally administered, is another scapegoat; also the preparations of mercury; ice-water, hot drinks, and climate. A foreigner will say: "I never heard of such a thing as decayed teeth in the old country." Some tell us soft foods are the cause.

Dr. Julius Pohlman says we do not use them enough. The negroes who chew sugar cane; the few old people left among us who persist in eating bread crusts, and the German peasants who are famous for their brilliant schwartzbrot zahne, or rye-meal-bread teeth (unfortunately no Scotchman ever crossed his path, or else oatmeal must of necessity come in for a share of his praise), and he further says that their teeth are polished, but not worn out by daily mastication of dry, hard, black loaves.

Our weak and effeminate teeth are not used to hard work, and, like other organs that are not exercised, tend to undergo atrophy. The foundation for bad teeth is generally laid in early childhood, for numberless mothers and nurses very carefully soften the food or remove the crust from the bread before giving it to the little folks, because it might otherwise "hurt their teeth." And so the children grow up with a set of unused teeth, then we wonder why the poor child has such bad teeth, and why it is so often suffering with toothache, and why the dentist's bill is so high.

All of these have their influences, but altogether are not sufficient to account for the prevalence of caries. It is a noted fact that the Esquimaux living on whale blubber, the tropical oriental with rice diet, and the savage with his forest nuts, grain, and dried meats, all have good teeth. Lack of lime in our food—bread as now prepared is principally composed of starch. According to Dr. Playfaire, "Average dietaries" for adults in health, is about twenty grams of mineral daily introduced with the food. This proves that the tissues may be saturated with lime salts, and if they be not appropriated there presence is of no value.

The act of nutrition is the appropriation from without of the materials entering into the composition of the living frame. The difference between the protoplasmic elements that originate a tooth and those which originate bone, we may never be able to distinguish; yet we know there is a force that directs to formation, as certain as intercepted light will cast a shadow. Over this process or affinity we have no control; germ-potency determines not only the time for the appearance of an organ, but also directs its form and function.

Given a well organized denture, an unimpaired nervous system, in a sound body without inherited taint, teeth would never decay so long as this condition is maintained, and that, too, irrespective of climate, peculiar kinds of food, or any external agents which might be present in the natural course of nutrition.

Even cleanliness, now considered so essential, would be unnecessary as a preservative of the teeth, and it would be practiced only for its comfort, for in a normal condition of the mouth and its fluids there is a process of self-cleansing.

Dr. T. B. Welch said: The title of that paper might well have been, "What We Don't Know About Caries." It is singular that we know so little about what is really our specialty. A gentleman sixty-five years of age—a judge, too—once asked me to sell him one of my separating files. I asked him what use he expected to make of it. He said it was to keep his teeth from decaying; that for many years it had been his habit, whenever he detected any roughness or incipient decay, to file off the surface quite smooth, and that was the end of it! I thought then how little I knew about my own business. We all have theories, and in looking for the proofs, if we find facts that do not agree with our theory, we conclude they are exceptions to the rule. The longer we live the less we find we really know. Because the Indians and the negroes have better teeth than we have, we conclude that it is because of our soups and soft food and pampered diet that we have poor teeth. Among the poorest classes of people, who may be supposed to violate all the rules of hygiene, we find quite as good teeth, if not better, as among those who observe all the known rules of health. And so we do well to ventilate the question of "What We Don't Know."

Dr. Cowardin: The gentleman who read the paper referred to my hobby—the action of sweets on the teeth, not directly, but through the acids they form. It seems natural for children to imbibe sweets. Some children eat pounds of sugar and candy in a day. A child was brought to me about two years ago—a child thirteen or fourteen years of age—the complexion pale, the flesh flabby, doughy; every tooth showed the action of acids on the surface. I said to the mother: "This child is not having a healthy normal diet—beefsteak," etc. The mother replied: "It is true; I cannot get her to eat anything substantial; nothing but candy and cake." She said I had described her diet as though I had lived in the house with her. I asked the child if she wanted to have her teeth preserved. She replied she did, and that she was willing to do anything that was necessary. I told her to stop, from that very day, and not eat any more sweets, except as an occasional relish. I put in ten fillings for her at that time, and she has required but one more since. That is one case, but I could relate many more. So many children come to me with bad teeth, and the same habit, that I have concluded one great source of caries is the lack of hygienic diet.

Dr. R. R. Freeman: If there is one thing that touches me more than another, it is this attempt to deprive children of their legitimate sweets. I think my teeth are pretty fair specimens of teeth for a man of my age, and I have enjoyed sweets all my life. Dr. Crawford gets after me because I give children candy, but I think it is a mistake to refuse to enjoy good, wholesome sweets—pure syrup and sugar; not the chemically prepared adulterations of the market, but if you can't get genuine New Orleans molasses, take sorghum. The appetite for sweets is a healthy, natural appetite, and nature furnishes sweets for our benefit. I don't want any miserable looking children about me. If you see a child pouting about some little trouble, touch him up with candy and you straighten him out at once. A child can't look cross while it is eating candy. It is not the sweets that hurt the child, but the lack of other foods. I never did believe in depriving children of what they naturally enjoy. Don't force your children to eat brown bread; give them sweets, fruits, and vegetables; give them what they like, and keep them good-natured and happy, and let them run and play, and exercise and develop their muscles. They can get more muscle out of sugar than out of anything else. The negroes are a sugar-loving, sugar-eating race, and look at their eeth. It is the unnatural modes of living, high living, fine dressing, strained propriety of movements, that ruin the general development of children and give them an enemic look. There is nothing better for children than good, pure sugar, straight from the cane juice.

Dr. Friedrichs: People blame sugar for poor teeth, but I do not endorse that. That is one of the popular fallacies. Sugar is a necessity.

Dr. Cowardin: The gentlemen have hit me hard, but I am not ready to retract. A mixed diet is all right, but nature never made any candy. Children who eat much candy eat it to the exclusion of normal tissue-building food.

Dr. J. Y. Crawford: I hope this subject will not be passed over lightly, as it is one of great importance, though the style of the paper and of the reader was rather one of light entertainment, so that I do not fully get at the teaching intended or understand where to locate him. We cannot judge from a single isolated case. Dental science has not yet got where the question of the etiology of this disease called caries can be considered settled. We must perfect our knowledge of the etiology of the disease before we can hope to successfully treat it. I believe it is within the power of man to solve the question of this phenomenon known as dental caries. I believe that man has the endowments necessary to accomplish that

feat, but there are many factors involved in it. Men have sought to taboo climate as one of them, and it is an important factor. The progeny of foreign parents who had good teeth in their own climate, have poor teeth in other countries; the influence of climate on the teeth is shown to place caries in the class of zymotic diseases. Some taboo the idea that it is caused by lack of functional activity, but I undertake to say that that is not a prominent etiological factor. In prehistoric skulls we find evidence of dental caries in individuals. I am an evolutionist and an involutionist, and in this I do no violence to the Christian belief. A proper understanding of the doctrine of evolution will show that any clashing between science and revelation is impossible. Neither is the doctrine of hereditary influence a truthful one. It is a popular fallacy that heredity is a prominent factor in the production of irregularities, but I believe that as an etiological factor it is at the very tail end of the list. Neither is there any more foundation for the dogmatic statement that man will eventually become an edentulous race Man is composed of three natures—moral, intellectual and physical, and these three natures must develop in equal ratio to make the perfect man. Let his physical development outstrip his mental powers and he will relapse into barbarism. Cultivate the mental only, at the expense of the physical or the moral nature, and the results are just as terrible. He must develop equally—mentally, morally and physically, or he is incapable of managing himself, his State, or his church.

As to the argument of Dr. Freeman and his reference to me, I submit that the character of the condiments consumed by children, as they are found in the little corner candy shops and in alley-ways, have done more harm to the American people than many habits that are strictly tabooed. One important factor that has not been referred to, and the disregard of which is to be laid at the door both of parents and of the profession, is the system of education in our cities. This is the worst of all that we have to contend with in the destruction of teeth. The members of the dental profession should be entitled to say when children are fit to enter school. As we are the ones entitled when the child is ready to leave the breast and change the character of food, so we should say when they are prepared to begin mental labor. Odontological science alone can decide that point. American children of from four to nine years of age cannot prepare food for the stomach that will fit their bodies to sustain the brain in educational work. They should not be made to undergo the severe ordeal of our city schools at that age. Enough money is spent at the wrong end of the line to carry out a complete system of higher education. If I am unorthodox I have at least the convictions of an honest man.

The Chair. We will now hear the papers on hygiene.

DENTAL HYGIENE.

The following report from the Chairman of the Committee, Dr. W. E. Walker, Bay St. Louis, Miss., was read by the Secretary.

REPORT OF COMMITTEE ON DENTAL HYGIENE.

Committee—Edward C. Kirk, Francis Peabody, R. R. Freeman, G. J. Friedrichs, J. T. Calvert, T. C. West, and W. E. Walker, Chairman.

MR. PRESIDENT AND FELLOW-MEMBERS OF THE SOUTHERN DENTAL ASSOCIATION; LADIES AND GENTLEMEN:—When I accepted the position offered me by our honored President, as Chairman of the Committee on Dental Hygiene, it was with pleasant anticipations of being with you on this occasion.

It is with sincere regret that I find myself compelled to forego the pleasure and benefits to be derived from such a gathering.

I have the honor of offering you two papers from this section, as follows: "Oral Hygiene," by Thomas C. West, D.D.S., Natchez, Miss.; "Hygiene," by R. R. Freeman, D.D.S., Nashville, Tenn. From other members of the committee I have either valid excuses or unfulfilled promises. From our confrere, Dr. E. C. Kirk, I offer the following letter in lieu of a hoped-for-paper:

PHILADELPHIA, July 7th, 1894.

Dr. W. E. Walker, Bay St. Louis, Miss.

DEAR DR.:—I am heartily ashamed of my neglect in not attending to your request with respect to furnishing a paper for the Southern Dental Association. My many duties have kept me so busily employed that it has been impossible for me to more than briefly consider the possibility of writing such a paper. I find now that I am compelled to get away for a short season of rest, to recuperate for my work in the autumn. This, my physician tells me, is imperative, I shall, therefore, go to Europe about August 1st, and remain till the middle of September, which will prevent me from attending the two great meetings to be held at Old Point Comfort. I sincerely regret the necessity which compels me to forego the pleasure of meeting with you, but under existing circumstances I feel that it is best to submit to the inevitable. My recollection of my former experience in meeting with the members of the Southern Association is still vividly pleasant to me, and if it comes in your way let me ask you to express my cordial sympathy and appreciation of their earnest work for the uplifting of our profession. With kind regards, Yours truly, *Edward C. Kirk.*

I have doubtless overlooked valuable papers, to which your attention should have been called, but in reviewing the subject of dental hygiene, for my report, as Chairman of your Committee, I have carefully scanned a large number of the dental journals published since our meeting at Lookout Mountain, July 26th, 1892, and offer you the following outline of what has appeared in their pages bearing on dental hygiene.

Accepting as the definition of hygiene, "That branch of medicine of which the object is the preservation of health," and including in dental

hygiene all that pertains to the preservation of the teeth, the health of the mouth and its tissues, the health of the dentist, and the hygiene of his surroundings. Our Section includes a broad field, with many subdivisions, of which I have made the following in classifying the papers which have appeared bearing on the work of this Section, *viz.:*

Dental hygiene *per se.*

The education of our patients and the public in dental hygiene.

Preventive measures in the hygienic care of children's teeth.

Personal hygiene as relating to the dentist himself.

Hygienic precautions in the stirilization of instruments, the hands, etc.

Hypnosis in its hygienic as well as other aspects.

Hygiene in the prevention of decay.

On dental hygiene *per se* we find "Dental Hygiene," by J. W. Boozer, South Carolina State Dental Association (*Southern Dental Journal*, December, 1893, page 548); "Oral Hygiene," by D. R. Stubfield, Tennessee Dental Association (*Dental Headlight*, January, 1894, page 5); "Oral Hygiene (editorial in *Dental Cosmos*, March, 1893, page 237); "The Hygiene of the Mouth," by Charles E. Francis, American Academy Dental Science (*International Dental Journal*, October, 1892, page 724); also, another article bearing the same title, by the same writer, read before the Pan-American Medical Congress (found in *Dental Cosmos*, November, 1893, page 1227); "Dental Hygiene" (ITEMS OF INTEREST, April, 1894, page 250); "Care of the Mouth and Teeth (editorial in *Dental Register*, March, 1894, page 152); "For the Teeth" (*Southern Dental Journal*, 1894, page 18); "Guardianship of the Teeth," by Grafton Munroe (*Dental Review*, July, 1893, page 587); "Offensive Conditions of the Teeth," by J. Taft (in ITEMS OF INTEREST, September, 1892, page 532, editorial from *Dental Register*).

The education of our patients, and the public, in dental hygiene, we find called "An Important Duty" (in a *Dental Review* editorial from Dr. T. S. Gilmer, February, 1894, page 115); the same subject is treated in a paper on "Education," by Dr. H. J. Burkhart, and discussed in the Union Convention of District Dental Societies of New York (*Dental Cosmos*, December, 1892, page 997); also, in a paper read by Dr. L. M. Warner before the First District Dental Society, New York, where it was discussed at great length (*Dental Cosmos*, January, 1893, pages 10 and 38); see also three letters respectively from Dr. W. H. Baldwin (*Dental Cosmos*, December, 1893, page 1309); Dr. Flanagan (*Dental Cosmos*, January, 1894, page 77), and Dr. Wm. Hughes (*Dental Cosmos*, March, 1894, page 248); also, a paper by L. L. Barber, read before the Northern Ohio Dental Society (*Dental Register*, July, 1893, page 350).

One of our most important duties in the line of dental hygiene is the care of children's teeth. Hygiene has been defined "the philosophy of prevention in contradistinction to resistance and cure." On this line we find "Some Further Considerations of the Subject of Dentition," by C. N. Peirce *International Dental Journal*, January, 1893, page 27); "Treatment of the Deciduous Teeth," by L. E. Gordon, read before the Southern Illinois Dental Society (*Dental Review*, December, 1892, page 948); "The Teeth During Pregnancy" (editorial in *Dental Practitioner and Advertiser;* also found in *Dental Headlight*, July, 1893, page 115); "The Care of the Teeth During the Eruptive Period," by E. L. Clifford (*Review*, March, 1893, page 192); "Parental Guardianship of the Teeth," by Grafton Munroe (*Review*, July,

1893, page 587); "Treatment of Deciduous Teeth," by D. M. Gallis (*Review*, March, 1893, page 201, read and discussed in the Chicago Dental Society, page 224); "Care of Children's Teeth" (*Dental Headlight*, January, 1894, page 35); "The Slaughter of the Innocents," by W. C. Barrett, read and discussed in the First District Dental Society, New York (*Cosmos*, March, 1894, pages 200 and 215); "Dentition a Cause of Disease," by C. S. Butler, read and discussed in a reunion convention of the District Societies of New York (*Cosmos*, December, 1893, pages 1301 and 1337); "Dentition and Some of its Diseases," by Dr. Marion Thrasher (in *Journal American Medical Association*, and found in *Cosmos*, March, 1894, page 238); "Lancing the Gums, as a Hygienic Measure," is discussed by Prof. Chas. Gordon (in *Dental Headlight*, January, 1893, page 8). In the same issue, page 9, A. Bethune Patterson discusses "The Dental Aspect of It," in reply to an editorial of *Cosmos*, January, 1892.

Of special personal interest are the papers entitled "Some Hygienic Considerations Relating to the Dentist Himself," by Garrett Newkirk, read before the Chicago Dental Society (*Review*, April, 1893, page 273, and the discussion in May issue, page 393); "Health as a Potent Factor in Professional Success," by Geo. F. Eames, read before the Massachusetts Dental Society (*Cosmos*, February, 1893, page 108); "The Health of the Dentist," by W. W. H. Thackston, read before the Tennessee Dental Association (*Dental Headlight*, January, 1894, page 1); "Some of the Causes of the Deterioration of Vital Energies of Dentists," by J. N. Farrar (*International Dental Journal*, May, 1894, page 289); "Does it Pay * * to Dig after Dollars to the Exclusion of Everything Esle, * * to Jeopardize Health and Temper by a Blind Policy of Continuous Application" (editorial by C. N. Johnson in *Review*, September, 1892, page 731); "Sunshine and Shadow," editorial in *International Dental Journal*, July, 1893, page 544, (editorial comments on the last in *Dental Register*, August, 1893, page 414); "Harmony and Discord, Health and Disease," extracts from an article by J. B. Davenport (ITEMS OF INTEREST, September, 1892, page 578); "The Duties of the Hour," including rest as well as labor, etc., editorial by Geo. W. Warren (in *International Dentdl Journal*, September, 1893, page 701); "Recreation," and "Walking" (editorials in ITEMS OF INTEREST, July and August, 1893); "Bicycles for Dentists," by Jno. H. Coyle (*The Busy Dentist*, May, 1894, page 57); "The Hygienic Value of Deep Breathing," as advocated in the Checkley System of Physical Culture; see an article entitled "Erosion of the Teeth," by S. G. Perry (*International Dental Journal*, April, 1893, page 260); "Foods," by Prof. R. W. Greenleaf (*International Dental Journal*, March, 1894, page 163); "Sleep as a Hygienic Factor" (from *Medical Journal*, in *Dental Register*, December, 1892, page 609); "Food Hygiene," by W. J. Moody (*Dental Register*, April, 1894, page 201, from *American Medical Bulletin*); "The Breath and its Disorders," by J. Taft (*Dental Register*, January, 1893, page 5, also found in ITEMS OF INTEREST, November, 1893, page 675); "The Alleviation of Tired Heels" (*Cosmos*, June, 1893, page 498); "The Attainment of Longevity" (from *Journal American Medical Association*, by D. E. Nelson, M. D., in *Dental Register*, June, 1894, page 280).

On the care of the eyes, we find: "Hints on Vision," by Prof. Schiess, read and discussed in the American Dental Society of Europe (*Review*, November, 1892, page 883); "Care of the Eyesight," by L. Webster Fox, M.D

(*Dental Register*, February, 1893, page 88); "The Sources of Ocular Headaches," by Chas. F. Macey, M. D., (*International Dental Journal*, January, 1894).

"Tobacco, from a Hygienic Point of View," *pro* and *con* (*Register*, February, 1893, page 91), by L. Webster Fox, M. D. (ITEMS OF INTEREST, November, 1892, pages 657 and 688); by A. F. Davenport (in ITEMS OF INTEREST, June, 1893, page 338); ditto (February, 1894, page 117); by L. L. Davis (*Review*, August, 1892, page 628), and discussion by Chicago Dental Society (*Review*, page 654, also *Dental Headlight*, January, 1894).

"The Hygiene of Rubber Plates," *pro* and *con*, J. B. Hodgson (ITEMS OF INTEREST, March, 1893, page 139); T. F. Skeede (ITEMS OF INTEREST, August, 1893, page 475); R. Finley Hunt (*Cosmos*, September, 1893, page 835; also, in *Southern Dental Journal*, January, 1894, page 5).

"Hygienic Precautions in the Sterilization of Instruments, the Hands," etc., by Dr. E. D. Downs (*Cosmos*, December, 1892, pages 1,000 and 1,005), in Union Convention of Dentist Societies of New York; W. D. Miles (*Cosmos*, January, 1893, page 1); Garrett Newkirk (*Review*, January, February and March, 1894, and ITEMS OF INTEREST, February, 1894, page 97; also, in the *Busy Dentist*, April, 1894, page 1); H. L. Ambler (*Dental Register*, September, 1892, page 415).

"Hypnosis," in its hygienic and other aspects, has received considerable attention during the past year; notably the paper of Dr. Fillebrown, read before the Dental Congress, an abstract and discussion of which is found in *Cosmos*, September, 1893, pages 985 and 1,005 (editorial in *Cosmos*, January, 1894, page 58); W. R. Newbold (*Cosmos*, February 1894); Mrs. J. Fremont Burket (*Cosmos*, March, 1894, page 209, and in *Periscope*, page 237; *International Dental Journal*, January, 1894, page 21). "The Ideal Dental Office" is illustrated and described by Dr. T. W. Brophy (in the *Review*, January, 1893, page 483).

Hans Block (Dresden), in a paper worthy of study, entitled "Mastication in Man" (see *Dental Cosmos*, March and April, 1894), says: " * * * Man breeds caries by his reckless contravention of all hygienic laws." Caries, or the decay of the teeth, being the disease which causes that destruction of the dental organs, the reparation of which constitutes four-fifths of our labor, a knowledge of the hygienic laws governing the prevention or the arrest of decay, and the causes leading to its production, is all important to us. In this connection, I would direct your attention to a paper by Dr. L. C. Ingersoll, read at the Columbian Dental Congress, entitled "The Relation of the Predisposing Causes (so-called) to the Actual Causes of Dental Decay," an abstract of which is found in the *Dental Cosmos*, Columbian issue, September, 1893, page 829. I quote his concluding words: "We need a better understanding of that dental hygiene that guards the very portals of life and nutrition, and forbids the entrance into the tissues of the teeth of every element of weakness and decay."

Bearing practically on this branch of our subject, though trenching also both on etiology and pathology, are the following papers: "Etiology of Dental Caries," by A. H. Peck, read before the Illinois State Dental Society (*Review*, July, 1894, page 493); "The Prevention of Caires" (editorial in *Review*, March, 1894, page 199); "Degeneration of Human Teeth; its Cause and its Cure" (*Review*, November, 1893, page 926; also, found in *Dental Headlight*, January, 1894, page 20); "What is the Cause of

Caires?" (editorial in ITEMS OF INTEREST, May, 1894, page 305); "Dental Caries as a Contagious Disease," W. J. Morrison (*Dental Headlight*, October, 1893, page 152); "The Effect of Food on the Teeth," Charles T. Howard (*Dental Cosmos*, January, 1893, page 19); "Relation of Food to the Teeth," etc., J. M. Whitney (*Dental Cosmos*, January, 1893, page 41; also, discussion of the same, page 48); "The Teeth of Children" (*Dental Register*, February, 1894, page 92); "Diet; its Relation to Tooth-Tissue," L. Ashley Faught, Central Dental Association of Northern New Jersey (*International Dental Journal*, June, 1894, page 366, and discussion in July issue, page 467); "Influence of Diet on Tooth Structure" (*Dental Cosmos*, November, 1892, page 951, from *The Lancet*); "Hygiene and Diet," the concluding portion of an article by Edward L. Briggs (*International Dental Journal*, August, 1893, page 570; also, discussion, page 613). A study of hygienic diet in the relation to "Erosion," may be found in a paper by S. G. Perry (*International Dental Journal*, April, 1893, page 249, and discussion, page 288); "The Relation of Dental Caries to Certain Forms of Indigestion," E. F. Wilson (*Dental Register*, February, 1894, page 78); "Influence of the Teeth on the Digestive Tract," by Prof. Paul B. Barringer (*Southern Dental Journal*, December, 1893, page 546); "Infection from the Mouth," E. L. Clifford (*Cosmos*, October, 1893, page, 1,120; also, found in *Dental Register*, April and May, 1894); "Syphilis of the Mouth and Teeth," Hugenschsmidt (*Cosmos*, September, 1892, page 673); "The Choice of Food and the Importance of Mastication" are treated editorially in the *Dental Register*, October, 1892, page 510; ITEMS OF INTEREST, December, 1892, page 750, and the *Dental Headlight*, January, 1893, page 35. Also, the articles by Hans Block, before mentioned, in *Dental Cosmos*, March and April, 1894.

A point of very special interest to all of us is the importance of proper hygienic precautions in counting our rolls of bank notes! Hans Block tells us (*Cosmos*, June, 1893, page 499,) that a young man died in Vienna last year, from a tumor on the lower lip, due to touching the tips of the finger to his moistened lip, in counting a large number of bills. Dr. Ghion, Medical Director of the United States Navy, in an address on "Sanitary Science," read before the Pan-American Medical Congress, last September, is quoted as having made the alarming statement that 19,000 microbes of diptheria, scarlet fever, and tuberculosis, have been found in a single bank note! Happy is the man who is not exposed to this terrible risk.

W. E. WALKER, Ch. Com. Den. Hy, S. D. Ass'n.

ORAL HYGIENE.*

Dr. T. C. West, Natchez, Miss.

On being notified by our President that he had assigned me to a place on the Committee of Hygiene for this meeting, my first thought was to decline, but after a second thought, with the love for our grand old profession burning brightly within me, ever spurring me on to do something to elevate us as a profession, I concluded I would not shrink from my duty, but would enter manfully into the fight, and add my mite, small though it be, with the hope that the few thoughts and suggestions I may throw out

* Published without editing, by request.—EDITOR.

might find lodgment in the mind of some one, and thereby stimulate him to look more carefully into the subject of oral hygiene.

In discussing this all-important subject I shall not attempt to tell anything new, but will instead mention a few facts that are old to us, with the hope that they will bring out new and more forcible thoughts from others. As a plea for oral hygiene, we will take it in its connection with digestion—my mind has been directed along this line a good deal of late to patients whose mouths were anything but pleasant to work with, and whose digestion was anything but perfect, and I am forced to conclude that if we kept cleaner mouths we would have more perfect digestion.

By the process of digestion the food is reduced to a form in which it can be absorbed and taken up by the blood-vessels and conveyed to different portions of the body to replace the wornout and waste material that is constantly being removed by the blood current from every tissue. In its passage through the alimentary canal (of which the oral cavity is the beginning) it is subjected to a number of mechanical and chemical actions in order that it may be reduced to a homogeneous mass, this condition being necessary for absorption, and the more perfectly this is attained, the more healthy will be our digestion, and in consequence of which more healthy will we be in general, and the better citizens we would be, for what is worse than a confirmed dyspeptic (I speak feelingly along this line, for I speak from experience). The first stage, then, of digestion is to convert the more solid particles of food into a pulp-like mass, this being accomplished by mastication within the oral cavity in which the teeth, tongue and salivary glands each have their important part to perform. The mechanical part being performed in part by the teeth brings us to the first question:

Which is—How can we have perfect mastication with imperfect organs to perform it with? Can we as dental surgeons accomplish the same results with imperfect and broken-down instruments as with absolutely perfect ones?

Does it not require the best the market affords for us to accomplish the best results? And again; can we with impunity take instruments from the mouth of one patient who is suffering from some disease of the oral cavity, or whose system is tainted with some hereditary disease, and with no means used to disinfect them, carry them to the mouths of other patients without placing them in jeopardy? I answer, no. And I think every man in this grand assembly will join me in answering no. Then what should we expect from a broken down dirty set of teeth?

Next along this line comes insalivation, and we all know what it is, and how important it is in the process of digestion, so we will not dwell on this portion, but will pass on to the connecting link that binds perfect insalivation and perfect digestion very closely together and showing wherein the one depends very greatly on the other. We know the saliva as secreted by the glands is a clear alkaline liquid, bringing about a certain chemical action when mixed with our food during mastication. Now, is this saliva (as a rule) when mixed with our food in a normal condition? And if not, can we expect perfect action from an imperfect impure secretion? I should certainly say not. Could we, in our daily practice, afford to use and prescribe remedies that we know to be impure and adulterated, and expect our patients to receive the same benefits as from pure, unadulterated drugs? I again answer, no.

Then if it is true in the one case, why is it not in the other? We might ask right here, When does the saliva become contaminated? Certainly not in its passage to the mouth. In answer to this we would but suggest that a look into the mouths of some of our patients would suffice.

Again we would ask, If the water from a beautifully clear and crystal-like spring be emptied into a cesspool, would not our stomach's revolt at the idea of a drink therefrom? True it is that the illustration is rather strong and exaggerated, but I believe many of you, if not all, will agree with me when I say it is none too strong to convey the idea of the filth of the mouths of some people, and thereby impress us with the fact of the importance of our being more thorough in our teaching the masses the value of oral hygiene.

Still another question presents itself: What causes the saliva to become contaminated? And can such contamination be prevented? And if so, in what way? The first part of this question brings us to a point where time forbids our going into detail as to cause. So we will but venture an assertion and say, in the majority of cases, uncleanliness is the prime factor of nearly all diseases and troubles that the oral cavity falls heir to. Am I not correct? And especially am I not correct when it comes to decay of the teeth, for we know that clean teeth do not decay. This brings us up to a point that I consider of vital interest to us as practitioners of dental surgery, and that is, How shall we teach (for doctor means teacher) and instruct the masses the proper hygienic treatment to pursue to prevent diseases of the oral cavity? Do we do our duty? I blush with shame when I say I am afraid not. Do we set the proper example to our patients? Are we fit subjects to pose before an intelligent public as teachers of oral hygiene?

What would become of the practice that many of us have labored so hard to build up, if we were as careless of other portions of our body as we are of our mouths? A few words now, Mr. President, as to what we could do, or I might say, what we do, and I will have finished.

Do we when patients present themselves to us for treatment, as a rule, see that their teeth are thoroughly cleansed before leaving our hands? And do we impress on their minds the importance of scrupulously clean mouths? And especially as regards an artificial denture? Do we in the rush of our daily practice, take the proper care in finishing our fillings and fitting our crowns, so that no particles of food may be held by them to decompose, and thereby set up a stock-farm of germs on a small scale? In that branch of our work that has lately taken such a hold on us, I speak of bridge-work, do we take the proper care from a hygienic point of view, or do we rush headlong into the work, only anxious to achieve success mechanically? Do we furnish our patients with means to prevent a septic condition of things? I have seen some few that I am afraid had never been instructed, but had been told that the bridge was self cleansing. And you all know what self cleansing is in a piece of bridge work. Do we circulate among our patients good literature on the care of the teeth? It takes but a glance around us to decide that there is a lack of education along this line among the people generally. Could the practitioner of medicine expect his patients to know what hygienic measures to pursue to prevent the spread of an infectious and contagious disease? Have we not all had our work to fail, wholly on account of the lack of attention on the part of the patient? And be told when a gentle hint is thrown out to that effect, "Why, I thought this tooth would never decay again after it was once filled."

I believe, Mr. President, that the time will eventually come when in our practice the means used will be preventive rather than curative, and while we may never be able to accomplish perfect results from that treatment, we will at least be able to meet more intelligently the demands made on us now for hygienic treatment.

So let us then turn our thoughts more fully toward hygiene, with none the less care of the mechanical portion of our work, and in time to come I believe we will see results from that work that we have never seen before, and we will receive that appreciation from those who come under our care, that will repay us ten times for the professional services rendered them.

With sincere regrets that I cannot be with you in this meeting, I leave the subject with you, with the hope that what I have said may cause some one to devote more time and thought to oral hygiene.

HYGIENE.

Prof. R. R. Freeman, M.D., D.D.S, Nashville, Tenn., Vanderbilt University.

Hygiene is the law of health applied to life, whereby a man may come to his full vigor of life, and accomplish that measure of usefulness and enjoy that happiness which human existence may afford.

A knowledge of this science will secure the means of battling with the conditions likely to produce discomfiture, pain, sickness, and death, till we are more prepared to enter into that next great state of action. Happy is the man who finds the real object of his being, and shapes his lifework accordingly.

To appreciate the present relation of life and secure its greatest benefits, man must recognize his dual relation and act on the hypothesis of a spiritual existence.

Born the weakest of animal creation, there is in man a concensus of power. There is no created thing on earth above him. While the mysteries of the future may startle and appall, there lingers in the breast a consciousness not only that I am, but that I am to be. Rob him of this faith, and we might well ask, "Is life worth living?"

Evolution proclaims the survival of the fittest. A more familiar adage has it, "Self preservation is the first law of nature." All of which may be true as relates to mere animal creation. But man is more than animal. He is subject to a higher moral law. The light of revelation has taught him to help the weak, succor the needy, and bind up the wounds of the afflicted. He that will cheerfully lay his hands to this work, will catch inspiration promised from a higher source, and learn of the doctrine which proclaims the fatherhood of God and the brotherhood of man.

Mortality and morality stand in no uncertain relation. The violation of law is sure to entail its calamitous results, be it against person, church, or state. Man stands as a free and rational moral agent, and must learn responsibilities. Life is what he makes it. Health, happiness, and prosperity are only attainable through the application of nature's laws. Time was when the preacher was thought to care only for the soul and teach men how to reach heaven when they died, while the doctor's office was to prolong our being here by ministering to the body when it was sick.

The Great Physician, while He taught the value of the soul, taught also that its temple was not to be neglected. While He opened up the way of light, life, and salvation to the view of man, and revealed some of the glories of the heavenly home, He also declared to His followers that the salvation of both soul and body was only to be obtained by the good we do in this life to our fellows. There is not a function of the body, nor an emination from the mind, but fills us with pleasurable sensations when they operate in harmony and conform to nature's laws.

We of the dental profession need play no insignificant part, and must help to make it easy for those we serve to realize these blessings. Notice the signs of the times, and see where we are tending. Hardships and calamities frequently are but blessings in disguise. The present great unrest in our land—in fact, throughout the whole world—is but the throes of nature, preparing for the birth of stranger things, perhaps, than our philosophy has dreamed of. The world is growing wiser; people are being educated; even our children are becoming philosophers, and will astonish us often with evidences of their knowledge of the issues of the day, and the movements going forward for the betterment of man. The nations of the globe are sending forth their representatives. Its wise men are assembling, and the object of their counsels, the subject of their thought, is to loosen us from our shackels and give to man the mastery he may attain through the science of hygiene.

From time immemorial frauds and unscrupulous men have taken advantage of the superstitions and weak mental conditions of man. Learned physicians sometimes cast about themselves a halo of mystery for selfish purposes, and pretenders deceive us, but the light of truth is fast dispelling the darkness, and honest, conscientious men and thinkers, it may be hoped, will need no longer dread the opprobrious epithets of crank and dreamer. There is power in enlightened intelligence, and in the study of physiology and hypnology, which, if our professional brethren rightfully apply, will hasten the reign of our lovely queen, Hygiea.

Why should our bodies and the maintainance of health be treated as of less importance than the esthetic arrangement and adornment of the dwellings we inhabit? We see to-day, in the so-called higher walks of life, men who make it their business to instruct in these minor matters. In my own modest city there is one who proposes, for a fair consideration, to give an evening call of inspection, and suggest, in most minute detail, how all apartments of the household should be conducted and arranged to give esthetic effect and give you standing in the social realm.

We may not hope, in the present state of man, to dispense entirely with the services of our doctors, but are not the times ripe for the advent of a new specialist, the counselor of hygiene?

CHLOROFORM.

Dr. A. C. Hewitt, Chicago, demonstrated his method of administering chloroform, for the alleviation of pain, without producing full anesthesia. He said he had studied the action of chloroform for more than twenty years, and found that long before full anesthesia was reached, pain was greatly lessened by inhaling chloroform. This was an accidental discovery in his own experience;

suffering from severe toothache while in church, and having a small vial of chloroform in his pocket, he removed the stopper and smelled it as he might cologne; to his surprise he found the pain gradually subsided. The next day he had planned to go to Detroit to have the tooth extracted, but concluded to lance the gum himself. Smelling the chloroform in the same way, he perceived no pain from the operation, though he buried the lancet in the tissues to the back, and cut the gums entirely free from the tooth. Smelling the chloroform bottle again he applied the forceps, and grasping it with both hands he extracted his own tooth without feeling any pain. From that time to this he has continued to give chloroform to his patients in that manner for the extraction of teeth, though he never extracts a tooth if it is possible to avoid it. Placing the fingers on one nostril he instructs the patient to take one long inhalation, removing the vial to prevent the exhaled breath entering it. As Dr. Hewitt continued his lecture, he inhaled the chloroform from a small vial occasionally, describing the gradual extension of the sensation as it reached the back of his hand and then his fingers, his lower limbs, the instep, the third toe, etc., till he reached the obtunded condition in which he said he would not hesitate to look on and have a finger amputated if it were necessary. He declared that neither his consciousness nor his senses were affected in the least, but the power of sensation to pain seemed to be completely hardened. After months and years of operating with this assistance, without inflicting any pain, he felt it his duty to place it before the profession as a valuable and perfectly safe obtundent. He has employed the method for more than thirty years, and has never had anything approaching an accident. Of late he applies cocain to the gums, but supplements it with this one of chloroform.

Dr. R. R. Freeman: How do you know when you reach the right point?

Dr. Hewitt: I have studied that point very carefully, and I watch for the appearance of a muscular effort to close the nostrils as the breath is drawn in; there is also a lazy droop in the eyelids, and a letting down easy in the chair—a sort of a don't care expression on the face. It is absolutely safe, and I know it. I have tried to kill small animals by giving it in that way, and I can't do it. The shock of extracting a tooth without it may kill a patient, but not chloroform given in this way. The idea is to give a very large proportion of air, perhaps a thousand of air, to one of the chloroform vapor.

The Chair: I wish to thank Dr. Hewitt for this idea, which is entirely new to me. But I am afraid of chloroform, and I would

not like to give the endorsement of this Association to the idea that chloroform is absolutely safe administered in any way. Though, as he says, he has had no accidents, yet he is treading on the brink of serious danger, I do not say this to criticize but as a proper measure of caution.

Dr. C. Sill: In my early practice, chloroform was given every day, but on a sponge; and I think that really the safer way, as we get a much smaller proportion of chloroform vapor.

Dr. H. B. Noble: I was familiar, as a student of Dr. Maynard, with the early experiments with ether and chloroform, and I agree with our President, and I would not like our young men to be impressed with the idea that there is ever absolute safety in the inhalation of chloroform. I say emphatically, that in my opinion, there is danger. I will give only one instance: A lady came to my office, suffering severely, and wanted to take chloroform to have the tooth extracted. It was before the days of nitrous-oxid, or I should have sent her to a specialist. She declined to take ether, which I would have preferred, as it affected her unpleasantly. She sat down in my chair, but with the first breath of chloroform she fell back, like lead, in the chair. I did not have a chair then to flat-out; I was not in the habit of using chloroform, and did not have the necessary restoratives at hand. I had an electric battery on the shelf, but, of course, it was not in order. Ammonia had no effect on her. I sent my boy for a physician, and took her out of the chair, laid her down, opened her clothing, and dashed cold water on her chest. As the water struck her, she gasped; but I venture to say she would never have drawn another breath if I had waited for the physician to come. But it gave me such a scare that I have never used chloroform since. Dr. Hewitt says he cannot kill small animals with it in his way. Well, I have thought I had killed rats and mice with chloroform that had been taken in a trap. I never saw them come to life again.

Dr. T. B. Welch: There are different ways of giving chloroform. Dr. Hewitt claims that safety lies in the large proportion of atmospheric air. I believe much of its danger is by not heeding this fact. But in every way there is danger. All have not the caution of Dr. Hewitt.

Dr. Noble: There is a physician in Washington, who, twice in my chair, has done just as Dr. Hewitt describes. He brings his own little vial of chloroform. He has his hand raised, and tells me when he drops his hand I am to extract his tooth. With him it has produced no ill effect. Dr. Geo. A. Mills, of Brooklyn, proposed the same thing to our Dental Association, but it was generally considered dangerous, and has not been adopted.

Dr. H. J. McKellops: I have had much experience in giving chloroform from a napkin to men and women, negroes and children, and I have never had any trouble. I have taken it in Dr. Hewitt's way too, and it exhilarates me. I got drunk on it. But we don't know when the fatality will occur. We hear of accidents all over the world, at the hands of the most scientific surgeons, so we should be as careful as possible.

Dr. R. R. Freeman: If all will call to mind the looks of Dr. Hewitt as he stood on the platform, you will recognize that he is a kind man, that he is kind to his patients, and in that kindness lies the magnetic, subtle force that does the work. The action of the chloroform in his hands exerts an influence of a dual nature. He has the power of disabusing the mind of its ordinary fears and lift him out of himself. But chloroform is one of the most dangerous drugs in existence, and it is especially dangerous in the hands of an inexperienced man. Dr. Hewitt seeks the comfort of his patients, but many would make extracting easy because of the dollars to be made. We should run no risks simply to relieve from toothache. Compared with chloroform, I believe that ether is comparatively harmless. By faith you can remove mountains, but I supplement faith with ether. Dr. Freeman related an incident of extraction with the aid of ether. A noted hypnotizer having failed to gain any influence over the patient, a so-called "blue-gum nigger," Dr. Freeman concluded to try his style of hypnotizing. He said to the darkey, "Look here; let's get that tooth out. I use ether, and if you do as I tell you it will be a small affair, but if you budge, or say it hurts, I'll break your neck!" He felt that he had received the full sympathy of the darkey, and that he was determined to do as he was told. The ether stimulated him and in two minutes, with two ounces of ether, he had the tooth out, and the darkey said it didn't hurt a bit; but, added Dr. Freeman, I believe that darkey lied.

At 8.30 P. M. the Committee on Clinics, Dr. J. Y. Crawford, Chairman; Dr. T. P. Hinman, Secretary, with Dr. C. Sill, Chairman Committee on Appliances and Improvements, offered their final and complete report as follows:

Dr. H. E. Beach, Clarksville, Tenn.: Surgical Clinics.

CASE 1.—Removed first lower molar for necrosis of alveolus and persistent abscess, using new forceps of Dr. Storer How. Operation successful.

CASE 2.—Removed left upper wisdom tooth, the second molar being crowded out of position its full diameter, the expectation being that the latter will gravitate into position; the wisdom tooth badly decayed on the anterior proximate surface, otherwise the second molar would have been extracted.

CASE 3.—Removal of right upper bicuspid root, broken off under the gum, with use of local anesthetic as follows:

℞. Cocain ..... grs. viij.
Antipyrin ..... grs. xij.
Aqua dist ..... ʒ iij.

M. Sig.—Inject two to five minims in gum for removal of tooth. Operation painless.

CASE 4.—Patient, boy, aged thirteen, edentulous space between left upper central right lateral; left lateral absent; right temporary central removed about six months previous, as stated by patient. Indications of eruption of tooth or teeth in edentulous space. In the opinion of Dr. Beach, the missing central and a supernumerary apparently within the alveolus. Dr. Beach made an exploratory puncture, finding what he believes to be the enamel surface of the teeth.

Dr. V. H. Jackson, New York, examined the patient, and believes the missing central about to erupt; did not make examination by exploration. He advised waiting developments. (See *Cosmos*, December, 1891.)

Dr. V. H. Jackson, New York, showed his wire "crib" appliances for regulating teeth, using German-silver wire, g. 14, and soft solder. Crib spring attachment 20 to 21 g.

The exhibit and clinic was interesting throughout, as evinced by the constant presence around Dr. Jackson's chair of as many as could see at one time. Your committee would respectfully suggest the careful observance of all Dr. Jackson's remarks in regard to his system, particularly the size and character of the wire used, the force being obtained from spring in the wire.

Dr. S. B. Cook, Chattanooga, Tenn.: Regulating appliance for the expansion of the lower jaw. The appliance made of bands and bars put together with vulcanite in which is placed a jack-screw. The committee take pleasure in commending the efficiency of this unique fixture.

CASE. 2.—Models of patient, aged thirteen, male. The superior central incisors were very much elongated and protruding, as the result of the injudicious application of elastic rubber bands designed to bring together the two central incisors, preparatory to driving them back in position; one of the bands worked up under the gum and remained there for some two years, preventing the success of the undertaking. Dr. Cook replaced them in normal position.

CASE 3.—Loss of the superior lateral incisors, resulting in the spreading of the centrals, necessitating bringing them back into position to make space for the insertion of laterals. This was

accomplished by banding the two central incisors with gold bands, soldered to the palatal aspect of the same, with metal bars projecting back from the palatal surface, over which was vulcanized a sufficient quantity of rubber to hold a jack-screw, having the reverse action of spreading the arch and bringing the two centrals together. The laterals were represented by skeleton, or open band crowns, extending across and back of the lateral space. The second model exhibited perfect closure of the space between the centrals, with laterals of normal size in proper position.

Dr. B. H. Catching, Atlanta, Ga., illustrated the use of a white linen roller-shade, in graduating and controlling the light, by means of a pully attached to the ceiling above and back of the operating chair, the efficiency of the same depending on reflection of the light.

Dr. Hollingsworth, Kansas City, Mo., began a piece of bridge-work for the lower jaw, extending from the second bicuspid to the wisdom tooth, using his original method of bridge-work.

Dr. Jno. S. Marshall, Chicago, Ill., commenced a surgical clinic in the treatment of an obstinate abscess, by the removal of the tooth, which is to be replaced. Impression taken for a gold splint to retain the replanted tooth in position. (This operation was abandoned, as there was not sufficient gas pressure to make the gold splint.)

Dr. W. H. Morgan, Nashville, Tenn., gave a clinical lecture, by the examination of a patient, giving special attention to the importance of proper physical diagnosis in detail, describing the treatment, and suggested probable prognosis. In the treatment of the dead teeth, in the case in hand, he insisted on the necessity of antecedent treatment, in order that the contents of the root canals and tubuli become mummified before filling. Dr. Morgan is a strong advocate of carbolic acid in such cases.

Dr. W. G. Browne, Atlanta, Ga., filled a large buccal cavity in the right superior first molar, using sandarac varnish to hold in position a large pellet of gold, into which he worked strips of gold, relying on the varnish only for a start, but not as substitute for anchorage. Dr. Browne used his new mechanical mallet, exhibiting great skill and familiarity with the principles involved in the introduction and consolidation of cohesive gold.

Dr. R. R. Freeman, Nashville, Tenn., filled superior second bicuspid and first molar with tin and gold, using tin at the cervical wall, lining the buccal wall with gold, in order to prevent discoloration from the tin. He used a matrix made of the end of a "00" file. He finished the fillings with thoroughly annealed, extra-cohesive gold cylinders, making a complete restoration of

contour. The operations were eminently satisfactory and instructive.

CASE 2.—Filling roots of superior left first molar, using yellow wax and lead points; a case of immediate root-filling, cleaning with alcohol (creasote preferable). He used Evans' root-drier to melt the wax in the roots, forcing the lead points home into the molten wax.

Dr. George Evans, New York, presented a method of crowning front teeth. He reams the root canals to a regular size, inserting a crown pin-post, perforating a small plate of platina with a countersunk spot to fit aperture of canal. The post has a screw thread, and is screwed through the countersunk hole and fastened in place by melting pure gold placed in the countersunk hole when the cap is made. The proximal and palatal sides of the root are then banded, using an original method of bringing the edges of the platinum plate over them. The porcelain tooth is backed with two sections of platina in such a manner that when the crown is soldered, the solder flows underneath the porcelain and over the cap and collar section, giving perfect continuity of all sections of the crown. The advantages of this method are, that no collar of metal is present at the cervical or labial margin; all the strength of the regular crown is obtained, and simplicity of construction is promoted. Dr. Evans also showed a method of forming bridgework with hollow, all-gold dummies, instead of filling them solid with metal or other material.

Dr. John S. Thompson, Atlanta, Ga., exhibited metallic models of block tin, made directly from plaster impressions, making celluloid plates thereon. Also, application of tin and aluminum foils to the wax used to mount cases, the surface next the foils coming out finished, and harder than when the foil is not used.

Dr John A. Daly, Washington, D. C.: Lining rubber plates with chemically pure gold, crystalline on one side and smooth on the other. He first varnishes the invested model with sandarac varnish, and then with damar varnish to make the gold adhere to the plaster model, the gold being adjusted in small pieces and the rubber packed over it. By this method it is impossible to separate the gold lining from the plate except by fire, files or scrapers. The lining will last the life of an ordinary rubber plate. He claims greater density for rubber vulcanized on a metal surface of that character, and, possibly, absolute cleanliness of the plate. The method of making this lining is as follows:

On a sheet of No. 20 soft foil is deposited crystals of gold, varying in thickness from No. 30 to No. 40, making the entire thickness of the completed lining about No. 50 to No. 60.

Dr. B. B. Smith, Gainesville, Fla.: Contouring left superior central incisor with cohesive gold and making a simple filling in the right central, using cohesive cylinders and ropes with the automatic mallet. The nerve in the left central he capped, using Dr. Genese's nervine vita.

Dr. C. Alexander, Charlotte, Va., exhibited his universal sandpaper, corundum-stone and rubber-cup mandrel. The special features are that the disk is removed and replaced while the engine is in motion and without reversing it, with no risk of tension or breaking spring or cable. The mandrel presents many good points, being an economical and time-saving apparatus, filling a long-felt want in this line.

Dr. J. H. Crossland, Montgomery, Ala.: A piece of bridge-work, using the hood-crown on a canine for one of the abutments, and the second superior bicuspid for the other, supplying the first bicuspid. He used Dr. W. G. Browne's investment compound in soldering. (This piece was not completed, owing to insufficient gas pressure for soldering.)

Dr. Wm. Crenshaw, Atlanta, Ga.: Exhibition and demonstration of an abscess drill, original with Dr. Crenshaw, with which a blind abscess may be opened into, through the gum tissue and the alveolus, to the point of the root affected. The device is so constructed and arranged that, after getting the length of the tooth from cutting edge to apex of root, it may be so set that a suitably shaped drill may be directed unerringly to the end of the root, thus establishing drainage or an open canal, through which medicaments may be passed through the tooth into the abscess, and thence out to the surface of the gum.

Dr. C. Sill, New York: Dr. Sill's traction engine is intended to draw into shape a subcervical band, where a superstructure of any kind—telescoping, cap, or band—is required on over-jutting crowns, without any mutilation of the tooth, saving, thereby, all the usual time and pain in cutting and shaping the tooth-crown, as necessary by any other mode.

Dr. W. V. B. Ames, Chicago, demonstrated the manipulation of oxiphosphate of copper, calling attention to the fact that the maximum of density can be obtained after the material has been used in a semi-fluid state; that in that state the cement best exerts its germicidal influence, and that absolute dryness is not essential.

Dr. W. G. Browne, Atlanta, Ga., exhibited his parchment and sandpaper disks, which cut as perfectly under water as when dry, which he demonstrated. As the disk is used, the grit becomes filled with metal, and the same disk used to cut down a filling will also polish it. Dr. Browne also exhibited his new engine mallet; also a disk carrier.

Dr. J. Y. Crawford moved a vote of thanks to the dental dealers for their liberality in furnishing supplies and offering opportunities of testing the merits of the new appliances, with an acknowledgment of their merits. He wished especially to express the appreciation of the clinic committee of the liberality of the S. S. White Dental M'f'g Co. in supplying furniture, etc., for the clinics, they having charged the committee only for what was absolutely used. The usual difficulty had been experienced in getting clinicians to be on hand with their own instruments and materials. Another difficulty had been that clinics had been attempted by some who were not competent to clinic before such a body of men as the Southern Dental Association.

Dr. McKellops said it always gave him pleasure to attend properly conducted clinics, but that everything should be in perfect order and readiness, so that a man shall be in proper condition to give a clinic that shall be instructive to all who witness it. The operator himself should be in perfect condition, too, with his hands and his finger-nails clean. We have strangers among us and they notice these little things. He said: I travel about a great deal, and I notice everything. I have developed a new bump of phrenology—*brass-facedness.* I pry into everything, and I like, when I go into a man's office, to find everything in perfect order, and not a lot of instruments that look as if they had not been cleaned for months. My office is always open to inspection. Some of my instruments are very old, but they always look as good as new. I do not go into all this new-fangled business of boiling in soda, etc., a little soap and hot water suffices, but I have every instrument in perfect condition, especially for cleanliness. I saw some things in the clinics that were splendidly done. If you want to do some thing that will be to your credit use platina-gold, No. 3 shade. It is something that cannot wear out, and in color nearly a match for the tooth. It beats any inlay ever made, and is no more trouble to use than gold. Williams was about to give up making it, there was so little call for it, till I begged him to keep it up. Our Society has had a hard struggle for existence, and I am proud of what we are now doing. Let our State and local societies make a specialty of clinics, and then when we come here we will be prepared to do it better. But we don't want any quack nostrums. Let the master of clinics rule everything of that kind right out.

Drs. J. Taft, J. Y. Crawford and B. H. Catching, the committee appointed to report on the recommendations of the President's address, offered the following report, which was accepted and adopted for discussion:

Mr. President and Gentlemen of the Southern Dental Association:

Your committee, to whom was referred the opening address of your presiding officer, would report that a careful perusal of the paper impresses us with the value and importance of many of the statements there presented, and we would suggest that an hour could not be better employed than in the consideration and discussion of at least some of these subjects, and we would especially direct your attention to the following particulars:

1st. The duty of our National Associations toward our State, District and Local Societies.

In what way and to what extent is such aid and assistance practicable?

In what way can a more intimate and closer relationship be established?

2d. The power and efficiency of State Examining Boards, for good to the profession.

What work can reasonably be delegated to them?

In what way can they best serve the greatest good?

3d. Uniformity in laws regulating the practice of dentistry.

How can uniformity be secured?

What benefit would accrue from such uniformity?

4th. To what extent is it practicable for our National Associations to influence beneficially dental eduction?

5th. What can our National Associations do to aid in the settlement of mooted points in practice?

Is a commission for such purpose practicable?

6th. What changes should be made in clinical demonstrations, to secure better results than hitherto?

Can clinics be employed to advantage in all classes of dental societies?

7th. Can commission be profitably employed for the investigation and the ascertainment of truth on assigned subjects?

With what authority should such a commission be invested?

The above points are prominent in the address, and we deem them worthy of careful consideration.

J. Taft,
B. H. Catching.

CHLOROFORM.

Dr. Hewitt was given the floor to reply to the remarks made on his method of administering chloroform.

Dr. Hewitt: My experience has been that the influence of chloroform given in the manner I described is very efficient in holding pain in abeyance, and yet is absolutely without danger. While deaths occur almost daily in the great hospitals from anesthetics, no one asks whether death results from the knife or from chloroform. I congratulate you on your conservatism, which is infinitely above that of the general surgeon. The medical man is assumed to be above criticism, and how often healthy, beautiful girlhood succumbs to the murderous exhibition of chloroform. I protest against the administration of chloroform to full anesthesia for any operation that the dentist has to perform. I am not talking to school-boys; I am talking to men infinitely above me in education and acquirements. I am but an humble dentist in

private life, but I love my fellow-men. I love the fair-haired baby girl who comes to my office all pale and trembling, and begs, "Don't hurt me." I know I can use chloroform, that dreaded drug, as safely as cologne. There is much in dentistry that is necessarily painful, and if there is any method by which pain can be held in abeyance it should be adopted by us.

Why is there so much danger, and so many deaths from chloroform? Because the surgeon insists on the prone posture. The vapor of chloroform is, as we all know, heavier than the atmosphere, and when the sponge saturated with chloroform is held over the face the whole of that vast amount of limp surface is no longer exposed to the pure atmosphere, but to that heavy chloroform vapor which excludes all air.

But for dental purposes, by my method, I have the patient erect and inhaling the vapor from a small vial held an inch and a-half away from the nose; the vapor that falls does not enter the lungs, and I insist that it is absolutely safe. I know of no operation more severe than the crucial incision made in opening a carbuncle, but I have done that by my method; and the patient was able to put pressure on a carbuncle on the back of the neck and say it did not hurt. What better proof do you want than that? It is not necessary, because death has ensued from chloroform administered in a reckless manner, that we should not use it at all. Morphin and strychnia may produce death, and yet they are prescribed every day.

Dr. Friedrichs: If all this is true, then why is it that a State which contains such a great university of learning, with a medical department, as Massachusetts, should have found it necessary to pass a law making it a penal offense for even an educated surgeon, a graduate in medicine, to use chloroform for anesthetizing purposes?

Dr. Hewitt: That has no reference to my method, in which there is no danger.

Dr. Friedrichs: Are you the only one that practices that method?

Dr. Hewitt: It has been stated here that a certain physician employed this method in having his own teeth extracted, but so far as I know I am the first and only one to publicly advise this method, but I claim no credit for it as it was entirely an accidental discovery. I wish I could clothe it with a scientific halo, but I cannot.

Dr. Friedrichs: That there is any method by which chloroform can be administered with absolute safety has been refuted by medical authors time and again. Dr. Friedrichs here cited the case

of a woman who had taken chloroform for surgical operations 200 times, and finally was killed by it like a stroke of lightning. Another case where a surgeon had administered chloroform to a certain patient a number of times and considered him a perfectly safe case and yet, with his class around him, when for their benefit every organ had been examined and no risk thought possible, yet the patient expired in spite of every known means of resuscitation.

Dr. C. N. Peirce: There is no case on record of a suicide by chloroform in the upright position. In many cases of neuralgia relief is obtained by slight inhalations of chloroform while sitting in the chair. One patient always brings her own bottle of chloroform, and putting a few drops on her handkerchief renders herself quite insensible to pain. I don't believe there is any danger in using it in that way; so many within my knowledge use it with impunity in that manner.

Dr. John S. Marshall: And yet there are those whose idiosyncrasy is such that one drop of chloroform will cause serious consequences. I will give you a personal illustration. My wife, before our marriage, wrote me that she was suffering from toothache, and asked my advice as to whom she should go to for relief. I advised her to call on my old preceptor. He examined the tooth, and placed in the cavity a pellet of cotton, not larger than a pea, saturated with chloroform. In less than half a minute he had to call for help, and she very nearly died. If two or three drops had been used there would undoubtedly have been a dead girl in that office.

Dr. Hewitt, by his method of inhalation from the vial, does not produce anesthesia, and yet he says the patient experiences no shock from operation. I think he would find his mistake if he undertook any serious operation. Chloroform *is* dangerous, and yet I use it very frequently, and even on little children. It is easier to manage and less liable to produce bronchitis than ether. I have never had a death from it, but I have been very close to it in a case of staphyloraphy for a child of two years old at the St. Luke's Hospital. We had three internes at that time. One administered the anesthetic, while the others assisted me in the operation. The chloroform was administered on a little wire cup covered with canton flannel, chloroform being dropped on that, one drop at a time, from a drop bottle. The assistant, getting interested in the operation, unconsciously lowered the cup too close to the child's face, and I noticed the lips of the patient turn pale; I found respiration had ceased. I immediately held the child up by the heels, and by means of artificial respiration, and giving two or three drops of nitrate of amyl on a handkerchief, the baby sighed, and I said, "Thank God, the child is not dead."

Chloroform *is dangerous*, and particularly so for dental operations. We have no right, under any circumstances, to administer chloroform to a person sitting in a chair. For dental operations I prefer nitrous oxid or ether. If chloroform is insisted on by the patient for the extraction of teeth, I say to the patient, "I will go to your house, and I shall expect to find you in bed, undressed, with a rubber sheet under you." Under those conditions only will I administer chloroform for the extraction of teeth, and in that way I avoid the danger from syncope and perhaps death. I don't like to give chloroform, but I do not refuse to give it (except in known case of albuminuria, where I cannot use ether). For excision of the maxilla and other capital operations about the face you must use an anesthetic, and you must choose the method involving the least risk for the patient. I say again, the dentist should never administer chloroform to a patient sitting in a chair. Dr. Peirce and the gentleman who spoke from the platform, by the method they describe, do not anesthetize the patient, but I am speaking of cases where full anesthesia is required.

HYGIENE IN PROSTHETIC DENTISTRY.

John A. Daly, Washington, D. C.

The care of the mouth has made dentists pioneers in discovering the importance of public hygiene. In recent years, the rise and growth of the bacterial theory of disease has clothed the profession with new duties and larger responsibilities. Possibly the theory has been pushed too fast, if not too far, yet prevention is the greatest function of the healing art, and cleanliness yields nothing to moral purity as a canon of right living.

The structure and functions of the mouth offer difficulties to the maintenance of that hygienic status which sanitarians demand and the public craves, and in the department of oral sanitation, dentists must keep in step with the general march. If that happy-go-lucky creature, man, was capable of being either flattered or scolded into taking proper care of himself, the history of medicine and surgery would have to be newly written and a new generation of practitioners.

Dentistry, in common with other liberal professions, has its burning questions and its professional sores. In the fore front of these is the controversy over vulcanite dentures. This has raged, with brief intervals of fitful silence, for more than a quarter of a century. Dentists were told, twenty years ago, that as gentlemen, obedient to the voices of honor and duty, the only use they could make of vulcanite as a denture was to disuse it utterly and forever. Yet it still holds its place, not because dentists as a class lack conscience or sensibility, but because it has demonstrated its place in dentistry. This place is a large and important one that nothing else is ready to fill. There is a conviction that the evils charged to it are preventible and therefore to be cured.

The vulcanized dental plate, as commonly made, presents a contact surface roughened and uneven, conforming to the shape and irregularities

of the palate to which it is to be fitted. If the rubber has been skillfully vulcanized, the plate, unhappily, is porous; if unskilfully, the porosity is increased. In practice, the vulcanization of the rubber usually falls so far below the laboratory standard of perfection as to occasion porosity in an objectional degree. Now, if we are to give but moderate credence to the exposition of the phenomena of the bacterial theory, it is evident that this cavernous or spongy structure, the vulcanite denture, is well adapted to the purpose of a microbic hive or nursery; when fitted in the mouth it is peculiarly provided with warmth, moisture and nourishment, for generation, growth and propagation of the bacteria. Hence, unless the bacterial theory is to be totally rejected, against the plainest evidence of ascertained facts, as distinct from its assumption, it is manifest that to furnish the main entrance to the human system with an incubating apparatus for microbes and germs is to add a new terror to life.

But apart from this, the porous structure of the vulcanite plate is saturated by the secretions of the mouth, heavily charged with organic matter, in a state of decomposition. Here we contemplate a condition at once disgusting and alarming. Regard for common notions of decency and for ordinary safe-guards to health require that the dental profession should not tolerate means leading to such odious and menacing consequences. It is but cowardly, or unscrupulous evasion, to say this foul and morbific state of things are avoidable by ordinary habits of cleanliness. It is not true. A nightly immersion of the plate in water, even if pure, is of little use. To expect that wearer to regularly take the plate to a dentist to be made wholesome, or to expect the owner to be provided with a chemical solution in which to steep the plate over night, would be to look for a radical change in human habits. We must resort to some simpler method for defense against bacteria, uncleanness, and disease. Fortunately, such a method is not undiscovered.

The existing state of the art of dentistry enables us to retain the cheap, convenient, durable and serviceable vulcanite plate without submitting to the evils due to its porosity. By simply interposing an efficient lining of suitable metal between the plate and the hard palate of the wearer, all the objections disappear.

A lining of gold, silver and tin foil, of platinum and aluminum, of crystallized gold with interstices filled by rubber, and of gold in mechanical union with other metals, have been each used without success. The foil linings soon peel off, as do those of aluminum or platinum; the palatine surface of a denture lined with crystallized gold, fortified by vulcanized rubber, is dull and unsightly, besides which the contact of the interstitial vulcanite with the mucous membrane of the mouth is provocative of the disorder known to dentists as "rubber sore mouth," and the duo-metallic lining either separates from the plate or tarnishes to such an extent as to predicate disintegration or degeneracy of the pure metal.

An efficient and suitable lining for vulcanite dentures has been found in a thin, pliable plate of pure gold, kept smooth on the palatine surface during the process of incorporation with the vulcanite, and with the other surface so rough as to be capable of a fast mechanical union with the rubber plate.

Take a sheet of No. 60 all-gold foil, smooth on one side and rough or crystalline on the other, the rough side having prominent and well-defined crystals, and press and fit this closely and accurately into plaster molds. Then vulcanize the rubber denture on this interposed golden base. The

union of metal and vulcanite is so thorough that it cannot be severed by mechanical means, and only by such heat or chemical disintegration as would destroy the denture. The lining cannot even intentionally be scaled or peeled from the plate. This bright, smooth lining of dense, lustrous, pure gold imparts a beauty of aspect to the plate which is an added and substantial element of value, sufficient in itself to win from the patient the moderate addition to the cost of the plate. The lingual surface of the plate attains a higher density, and is capable of a specially attractive polish from being vulcanized on so firm a base. The plate is a more accurate copy of the model than when the vulcanizing is on a bare surface of plaster. The fit of plate to the mouth is practically perfect. There can be no rubber sore mouth, or the cultivation of disease germs. The poisonous secretions of effete or decaying matter, deep-seated uncleanness, unsightliness, and malific odors, are reduced to a minimum. The lining can be applied as quickly as the plaster, and dirt can easily be cleaned from the rubber plate.

Dr. W. V. B. Ames read the following paper on

OXIPHOSPHATE OF COPPER.

At the meetings of the Mississippi Valley Dental Association, the Illinois State Dental Association, and the American Dental Association of 1892, was presented as a novelty the oxiphosphate of copper which had been used by the producer for two years or more at that time. While it is still somewhat of a novelty, it has been used by a few to sufficient extent to arrive at a more definite estimation of its value. Before placing it before the profession, the facts had been demonstrated that it possessed valuable properties and was entitled to some place in our list of filling materials, but more time has been and still will be required to arrive at a tangible conclusion.

Before going further it will be well to repeat what was given on previous occasions, that this cement is compounded by mixing black oxid of copper-cupric oxid with a solution of phosphoric acid. The cuprous or red oxid of copper will also form a cement with the same acid, but the cupric has been found best to serve the purpose.

It was early demonstrated that in this compound is formed a phosphate of copper *per se*, which is in solution in an excess of phosphoric acid while the cement is in a plastic state, and which will penetrate to an extent the tubuli of the dentine and exert a positive embalming effect, but which is insoluble in the oral fluids after crystallization takes place. The compound is a very hard and insoluble mass, and very black. In the early experiments it was found that the hardest mass was obtained by using a solution of phosphoric acid which, from its nature, was rather caustic to the vital tissues. When the components are properly mixed, a plasticity is obtained which would make it a very desirable material for crown and bridge setting if it were not for its caustic nature. The ideal results are obtained by using the cement in a creamy fluid state, so that if properly mixed a crown or bridge can be deliberately brought accurately to its position, and yet obtain the full density of the material when crystallized. On account of this caustic property, the use of the material was soon found to be contra-indicated for crown setting. This ability to obtain density after a fluid state being still an advantage, however, in the use of the material for filling purposes.

A cement with a fair density can be obtained by using the cupric oxid

with a neutralized non-irritant solution of acid in which the same desirable plasticity is obtained, and which may be found to be sufficiently dense for crown setting purposes.

The consensus of opinion seems to be that extreme density of cement is not essential within a crown, but that proper crystallization from a fluid state is the main requisite.

Of course, a caustic material dare not be used indiscriminately for filling purposes, as in all probability the result would be an occasional devitalized and mummified pulp, such as has been often found under an oxichlorid capping or filling, but where conditions will admit of its use the cupric phosphate may be fairly flown on the surface of tooth tissue obtaining a firm attachment, and, as has been said, the maximum hardness of the material.

Its permeation of the tubuli of dentine, and of some disorganized dentine renders its use often practicable where the thorough removal of disorganized material is impossible, effecting at the same time the arrest of the destruction of tissue and the correction of the sensitiveness which rendered impossible the further excavation. A great many extremely sensitive cavities have been filled with this material with almost no preparation beyond the securing of fairly good margins, and after a few months prepared satisfactorily for filling in a more permanent manner. Its use in the stopping of cavities in temporary teeth has been most satisfactory. With very indifferent preparation of cavities, which is a boom in the management of these patients, these teeth can be saved through their natural term of usefulness with this material, The open fissures of the permanent molars of young children can be sealed up with this cement without putting the patient to any objectionable discomfort. Then in the treatment of the very trying grooves and cavities on the buccal surfaces of molars, especially the third, and the grooves on the palatal surfaces of molars brought there by the contact or proximity of a vulcanite or metal plate, this material can be employed as can no other known to me. With as thorough removal as practicable of the disorganized structure, but with no necessity for anchorage, these grooves or cavities may be flushed out with cupric phosphate in a fluid state, and most satisfactory results obtained. If the surface to which the cement is applied is hypersensitive, there will necessarily be some pain which will subside as we would naturally expect after the use of any other similar caustic, the irritation being similar to that caused by the use of chlorid of zinc.

When, on account of extensive decay, the cavity has perforated the exterior of a tooth below the gum line, and a fungus penetrates the opening, I know of no more satisfactory treatment than the excision of the fungus, obtaining a smoothly healed surface to the tissue by the placing of one or more gutta-percha stoppings against it, and then placing the cupric phosphate in a fluid state over the breach and filling with it as much of the cavity as desirable. The tissue apparently remains as healthy in contact with such a surface as any we might produce, this cement presenting a very smooth surface as it crystallizes from this fluid state if not disturbed during crystallization, and right here is an important feature to be kept in mind, *i. e.*, that the material must be used in a fluid state and not disturbed during crystallization.

This cement calls for manipulation so different from any of the zinc phosphates that we will not be apt to use it successfully except after seeing it used clinically, and then making some individual experiments. We are

so accustomed to cements which need only a moderate amount of rubbing together of the liquid and powder, that it is difficult to impress on an operator, by means of printed directions, the necessity of triturating this mixture till the proper consistency is obtained.

The powder being added directly to the liquid till a stiff mass is obtained, vigorous rubbing is employed on a broad slab with a broad, stiff spatula, which will first reduce the mass to a fairly watery state, when the rubbing must be continued till the fluid changes from the watery condition to that of an unctious cream, resembling oil, paint, or printers' ink, which will just run slowly from the spatula in a stringy manner.

This cement is very susceptible to changes of temperature, it being necessary to use much more powder in proportion to liquid on cold winter than on hot summer days. This can be regulated also by having liquids for quick and slow setting, using one or the other, or mixtures of certain proportions of each, to suit the atmospheric conditions of the moment and the particular case in hand, but this can be only undertaken by one who is thoroughly interested in accomplishing the best results possible with such materials. Too little notice is taken of the difference in the behavior of oxiphosphates with different atmospheric conditions. Our best results are unquestionably obtained during the cold winter months, when the atmosphere of our operating-rooms is almost devoid of moisture, and the temperature allows us to incorporate a larger percentage of powder with liquid than would be practicable on a hot summer day. The difference can be taken advantage of, however, by using a solution of acid during warm weather which would not remain fluid if exposed to low temperature, this solution naturally giving slower setting and allowing of the use of a larger percentage of powder.

The characteristics of the combinations of phosphoric acid and metallic oxids are so little understood by most operators, that it is small wonder that the maximum of good success is not acquired in their use. The average operator has one variety of cement at command, and confines himself to its use because it seems to be as good as any, and he is familiar with its manipulation. The very fact that some of the least reliable cements are most easily manipulated, explains their popularity and extensive use, but I hold that every operator should have at his command at least three varieties of oxiphosphate. He should have, first, one for filling purposes in which the liquid contains no soluble alkaline phosphates, and the powder is of a highly crystalline nature. This condition of liquid can be recognized by the absence of alkaline and the presence of acid taste when the cement has first solidified. This acid taste should be very slight, and should entirely disappear in a few seconds after immersion in the saliva. Such a cement should be mixed as stiff as practicable, and should pack definitely against the cavity wall, adhering to the tooth structure rather than to the packing instrument. This can be facilitated by having a film of the dry powder on the surface of the packing instrument which will facilitate the packing, but with a proper cement for the purpose, this is seldom necessary. With such a cement for this purpose there will be less complaint of failure at the cervical margin. While this variety may be used for crown setting where the operation can be quickly performed, admitting of the mixing of a fair quantity of powder with the liquid, but where more deliberate movement is called for, its use is contra-indicated for the reason that when used of a fluid consistency, proper crystallization does not take place.

The second variety should be for the setting of crowns and bridges when deliberate movement is essential for non-irritant cavity lining, and I will include the temporary sealing in of medicaments. This cement, according to the best of my knowledge at present, must be one in which the liquid does contain a soluble alkaline phosphate, and which does not give as hard a mass, but which has the working qualities more requisite to the purpose and is less irritating than the first described. It will not have the acid taste when mixed to the consistency for crown setting, and less, of course, when mixed for cavity lining. Such a cement is very adhesive, and if used for filling, there is great danger of faulty adaptation at the cervical margin, as while it adheres tenaciously to dry surfaces, it will not attach itself to moist surfaces, and it is my belief that a great many cervical margin failures might be traced to the employment of a cement of this variety, which was drawn away from a slightly moist cervical margin during the trimming of the filling, as this variety will draw under a cutting instrument, unless it has hardened thoroughly, and has not that crispness which will be acquired by the first variety after crystallization has progressed for the same length of time.

The third variety of oxiphosphate which I think should be employed by every operator, is the oxiphosphate of copper, to which this paper has been mostly devoted. As time has passed since its employment was first conceived, I have felt more and more satisfied that great good can be accomplished with this, in a great many of what would be termed ordinarily desperate cases. As the cement congeals, so to speak, hot water should be ejected on it, which will hasten the crystallization to such an extent that the protecting napkin can soon be removed without the patient noticing any objectionable taste. If exposed to the saliva at the expiration of the same time, without having been treated with hot water, there would be a very objectionable copper salt taste.

As to the large variety of cements which I make use of, and which could be used only by one thoroughly enthusiastic over the possibilities of the material, it will suffice to say, that with sufficient variety of the material at command, one is able to prepare a cement with almost any quality desired, including, I believe, one in which a positive, or germicidal, antiseptic action may be obtained without detracting from the density, or giving of an objectionable color.

Dr. R. R. Freemen: It is clear that Dr. Ames has solved the question we have been trying to answer. Some cements work to our satisfaction at times, and again the same cement utterly fails us. I propose to sit at the feet of Dr. Ames and learn from him. I feel convinced that he knows much more about the cements than any of us, though, as he says, we don't know much about them yet.

Dr. H. B. Noble (Washington, D. C.), read the following report from the Committee on

LITERARY AND VOLUNTARY ESSAYS.

Dr. Henry B. Noble, Washington, D. C.

A very complete list of new books and works of interest to dentists is to be found in the report of Dr. A. W. Harlan and published in the *Dental Review* for June, 1894.

Catching's Compendium of Dentistry improves each year, and is richer than usual in good, well selected information, intelligently condensed and of interest to every dentist.

The National and United Dispensatories.

Richardson's Mechanical Dentistry.

Evans' Crown and Bridge-work.

Guilford's Orthodontia.

Miller's Micro-organisms of the Human Mouth.

"An Introduction to the Study of Bacterio-Pathology of the Dental Pulp," by Dr. W. D. Miller, of Berlin, published in the *Dental Cosmos* for July, 1894.

The Transactions of the World's Columbian Dental Congress.

These are among the most important of the publications of the past year, which should be found in every dental office; of course, not omitting the writings on the new "fad" Hypnotism, which we all variably practice, though unconsciously by most of us.

If the standing of dentistry is to be judged by its literature, the past year is one of marked improvement; especially is this the case in the editorial department of our Dental Journals, proving the old adage "practice makes perfect." Long, windy articles are going out of date; what is wanted is short articles on specific points, to the illustration of some new method of manipulation, or of the action of some medicine. It should be the aim of every writer not to use unnecessary words. The ponderous editorial of the daily press of a quarter of a century ago finds no place in modern journalism, and our writers should be guided by the examples of the daily press.

Societies are often bored and wearied by long papers, that by their length scatter both thoughts and audience, rendering their discussion impossible. Local societies should encourage and try to induce young men to present papers, and thus put them in training for service in our State and National societies.

Some of our journals have published papers of young men who have nothing of interest to say, but seem anxious to see their names in print, or as an advertisement for home consumption; these articles, by obscure or young men of no standing or connection with local societies, should be carefully scanned by editors before publishing them. Local societies are the place for amateurs and vealy papers.

As Dr. Harlan so aptly says in the report to which I have referred: "If you make a discovery, print it; if you have an unusual case, report it; if you do some original work, tell how you did it; but do not read a little bit about a subject, and then rush into print and show your ears so every one can see them."

The treatment and filling of pulpless teeth has been one of the leading subjects of discussion in our societies and in our journals, but no universal course of treatment or filling has as yet obtained.

The papers of Prof. C. N. Peirce, of Philadelphia, and G. V. Black, of Jacksonville, Ill., "On the Pathology of the Disease of the Peridental Membrane, Generally Known as Pyorrhea Alveolaris, and its Connection with a Gouty Diathesis and 'Uric Acid,'" are among the most important and scientific papers of the year, and should receive careful consideration and study, more especially as the disease seems to be on the increase and demands our

earnest attention and study if we would successfully combat its insidious progress. The interchange of papers between societies of different localities has been spoken of as a means of presenting subjects for discussion, and of encouraging a friendly fraternal spirit that would serve to interest and infuse new blood into some of our stagnant badly attended societies. A paper read before a local society that provoked discussion or deemed worthy of more general circulation could instruct its secretary to send it to another society thus acting as a standing premium for good work.

Our minds, like our instruments, need sharpening, and like our teeth are improved by good vigorous use; an active educated brain will the better guide our hands in those delicate operations we are daily called on to perform.

I fear our journals are not as generally taken or read as they should be. I would recommend that our local societies subscribe for the various journals, and make themselves into a sort of circulating library for the benefit of those who cannot, or will not, subscribe for them, but could thus be induced to read them.

Dr. T. M. Allen (Birmingham, Alabama): That is one of the best reports I have ever heard from that committee. It is short and to the point. Many of the papers to which we listen would be greatly improved if they were "boiled down."

Dr. George J. Friedrichs: I second that motion.

Dr. V. E. Turner read a supplementary report from the Executive Committee, including a number of bills for expenses incurred.

Dr. R. R. Freeman: I move that all bills endorsed by the Executive Committee, be allowed and ordered paid without further action. So ordered.

Dr. J. N. Crouse: I have with me all my papers and vouchers, notes and mortgages of the Dental Protective Association. I ask that the Southern Dental Association appoint a committee to act with a similar committee from the American Dental Association, to examine these documents and see if everything is correct. The precedent was established at the meeting held at Excelsior Springs, and it gives strength and moral force to our work.

The Chair appointed Drs. R. R. Freeman and V. E. Turner as said committee.*

The consideration of the President's address was made the special order of business for Monday morning. Adjourned.

Called to order 9 A.M., Monday, August 6th. Dr. J. Y. Crawford, chairman of the committee appointed three years ago to investigate charges brought against Dr. Holcomb, and which, at

*The American Dental Association, at the meeting held August 7-10, appointed Drs. H. A. Smith, C. E. Esterly, and Louis Jack, to act with the above committee. Having examined the books, papers and vouchers offered by Dr. Crouse, on behalf of the Dental Protective Association, the joint committee reported that they had found everything correct and satisfactory. The report was ordered made part of the transactions of the Southern Dental Association.

the meeting at Lookout Mountain, requested further time, reported that the evidence was insufficient to prove Dr. Holcomb guilty of any unprofessional acts since he had become a member of the Association. He did not think it was competent to investigate what had occurred before he became a member of the Association.

It having been ascertained, from reference to the Treasurer's books, that Dr. Holcomb's dues had been kept paid up during this protracted investigation, on motion of Dr. W. G. Browne, the charges were dropped, and the committee discharged.

On the recommendation of the Executive Committee, Dr. M. F. Finley, Washington City, was elected to active membership.

Dr. H. E. Beach, of the Committee on Revision of the Constitution, stated that he had done some individual work along this line, but not having been able to secure a meeting of the committee he had no report to make.

By unanimous consent the committee was continued another year. The committee consists of Drs. H. E. Beach, E. S. Chrisholm, and B. H. Catching.

Dr. J. R. Woodley: On this, the last day of our meeting, we have a sacred duty to perform in honoring the memory of the many prominent members of the Association who have passed away in death during the last two years. I hope the Association will take proper steps.

On motion of Dr. Crawford, Drs. Woodley, Peabody and Freeman were appointed a Committee on Necrology, with instructions to prepare suitable resolutions to be spread on the minutes.

Dr. S. W. Foster (Secretary): Among the items of unfinished business I call attention to a resolution offered, but not acted on, that the Association employ a regular salaried reporter, to be known as the Official Reporter of the Association.

Dr. J. Y. Crawford: I rise to a point of order. We have yet much important business before us. The special order of business for this morning was the consideration of the President's address. I move that we now proceed to that order of business.

The President called the First Vice-President, Dr. S. B. Cook, to the Chair.

Dr. Boozer: The Committee on the President's Address reported a series of topics for discussion. I move that we take them up in the order presented by the committee.

Dr. H. E. Beach: If we take them all up *seriatim* we will not finish to day. It would be better to let each member make remarks on one particular point than devote an hour to the whole address.

Dr. Catching: The committee placed before us only salient points, and we had better take them up in the order given.

Dr. Noble: Let the Secretary read the report by sections.

The Secretary: The first point was the duty of National Associations toward State and local societies.

Dr. L. P. Dotter: Let the members of the committee, who opened the paper and made the report, open the discussion.

Dr. Jno. S. Marshall: Dr. Taft, who offered the report, is now engaged in the meeting of the National Association of Faculties, and we had better proceed without him. We are competent to discuss the valuable suggestions placed before us. There is one suggestion which, though very valuable would require funds to carry it out. It is the appointment of commissioners to examine into and report on the scientific work of individuals. The experiments and study necessary to go over such work, to ascertain if correct deductions have been reached, would require time and money, and unless the Association is in position to vote funds for such a purpose it would fall through. If it can be carried out I will be glad to vote for money to be spent in such scientific investigation.

(By request, Dr. Catching read the report of the committee again, per page 75.)

Dr. V. E. Turner: I would suggest as the most practicable plan, that a committee be appointed to report at the next meeting, as to the most important questions to be investigated and the amount they judge sufficient for this purpose. Let the Association then raise that amount, and the result of such investigations would be regarded as final authority for the conclusions reached.

As to the efficiency of State Examining Boards and their scope of usefulness, the powers of the Boards are defined by the law of the State creating them, and it is useless for us to discuss that point. The bone of contention seems to be the examination of the holders of diplomas. It has been said here that a diploma should be the passport to practice in any and every State. At one time, before the organization of the National Board of Faculties, it was not within the power of many of the State Boards to pass on the reputability of the colleges, and it was considered the safest plan to examine all applicants alike. Dental laws were passed. We went before the State Legislatures and said that in order to keep in the line of progress it was necessary to have such and such a law. The Legislatures complied and gave us what we wanted. Shall we now go to them again and say: We don't want it any more?

We must remember that the examination of men with diplomas does not militate against progress in dentistry; then why should we decry the laws that we have asked for? The Association

cannot deal with the Examining Boards; it is for the Legislature of each State, and we should not be in too great haste to wipe out what we have so recently advocated as a step in the line of progress.

Dr. Fr. Peabody: The State Boards were an absolute necessity, but State laws are not unalterable. The progress of all large bodies is necessarily slow, and some movement must now be made to overcome the existing state of affairs in regard to the fact that no State recognizes the examinations in other States. I have been in practice forty years, but if I wanted to locate in Mississippi I would have to go before the Examining Board and pass an examination! If I concluded to go to Georgia, then I would have to pass another examination, and the same again in Alabama.

One State does not recognize the examination given in another. If one State would start the right thing, it would serve as a nucleus around which other States would gather. If all the colleges graduated only those really entitled to the degree, there would be no necessity for graduates to go before the boards.

But, unfortunately, some of the colleges are working for the dollars rather than to impart knowledge. The proper courtesy from one State to another would be to recognize the fact that probably the best men in the State were chosen to positions in the Board, and that are competent to examine all applicants, and having placed their signatures to the certificate, that they have been found eligible to practice; that should be all that is necessary to admit them to practice.

Dr. B. H. Smith: As the author of the suggestions in the address, I will say that my proposition does not seem to be comprehended. I said, while all recognize the beneficial influence and the good work done by the Examining Boards, ascribing to them a certain police power as guardians of the public safety, I would suggest the appointment of a committee to act with committees from other Associations in the work of preparing an ideal uniform dental law. Dr. Turner said we could not request the State Legislatures to annul the laws we had demanded in the interests of progress, but this could very well be done, on the ground that the laws have accomplished the special work for which they were designed.

Dr. Edwards (Louisville, Ky.): It has been assumed that there is an antagonism between the colleges and the Examining Boards, but I fail to see why such an impression should prevail. The fact is, if it had not been for the Examining Boards the colleges would not have attained their present high standard, turning out only thoroughly competent men. The Examining Boards were necessary to compel men to go to college, in order to become perfectly equipped. Before these laws were enacted, two-thirds of

the men calling themselves dentists were not competent to practice; they were non-graduates and men of no education. The good effect of these State laws was to drive men to the dental colleges. That was the chief aim and object of the laws, to force men to prepare themselves thoroughly for the practice of dentistry. As to the propriety of every Examining Board recognizing the certificates of every other Board, that might be possible if all Boards were appointed in the same manner. But some are chosen by the State Association and others are appointed by the Governor of the State. In what respect is the Governor of a State qualified to select the most competent men to serve on Medical or Dental Examining Boards? If it is left to the State Association to select them we can safely trust to their choice. In Kentucky it is a matter of very serious consideration who shall be placed on the Examining Board.

Dr. J. Hall Moore: There is no conflict now between the National Association of Faculties and the National Board of Examiners. It is recognized that the Examining Boards have done a good work in elevating the standard of professional education.

Dr. Fr. Peabody: When the laws were first enacted, and the first boards established, it was necessary to examine holders of diplomas, for diplomas were sometimes a lie; it was very easy for some to get through a dental college with very little education. But the Examining Boards have forced the colleges to a course of three years, instead of two, and they have made the colleges, which sought only the dollars, seek something else. Men don't inquire now where you got your diploma, but where you got your education. As to the unification of dental laws, that is a subject for the National Association of Examiners to study; that is a part of the work laid out for this year's meeting, of devising the means to securing a uniform dental law for all the States, with a uniform method of appointing the Boards, so that an examination held in one State should be good in all others. That is our present work, and I hope for great results, and that we may eventually go before our State Legislatures with a uniform law, which shall be satisfactory to the colleges, to the Examining Boards, and to the profession. It is a hardship to feel that men who are prominent in the profession—men whom we delight to honor, would, if desirous of changing locations, be compelled to go before an Examining Board and be put through like some schoolboy.

Dr. Jno. S. Marshall: If it could be so arranged that the State Examining Boards could be represented and participate in the final examinations of the colleges, and sign the diplomas, that would prove the reputability of the college. A diploma thus

signed should be a passport to practice in any State of the Union. The Examining Board of the several States would be bound to recognize such diplomas. It is not necessary that a man should be re-examined in all the branches that he studied when in college. I doubt if any of the members of the State Examining Boards could stand the final examination in one of our best colleges. A man who has been engaged in a busy practice for a number of years gets rusty on those branches for which he has no constant practical use. I know I could not pass the examination myself in, say chemistry, because there have been many changes made in the teaching of that science, and I have not tried to keep up with it. So with others, perhaps, in anatomy and other branches. And so it is not fair for the State Boards to require these college examinations from men of experience and known ability.

Dr. H. B. Noble: That is exactly the position I took in my paper: that the Examining Boards should have representatives present at the colleges before diplomas are granted. Let the representatives of the State Boards so endorse the diplomas that they shall go in every State. In lieu of the suggestion in my paper, I will endorse a committee of representatives from the two National Associations, from the National Association of Faculties and the National Board of Examiners. Such a combination would certainly result in some practical outcome.

Dr. Marshall: My point particularly is that State Boards should have representatives at the final examinations of the students in our senior classes; let them see all the written papers, look over and assist in marking them, take part in the oral examinations, and satisfy themselves that the students are properly qualified, and then sign those diplomas as a passport to practice in any State whose Examining Board is thus represented.

Dr. J. Y. Crawford: In the solution of this question there are two questions to be answered, How are the State Boards of Dental Examiners created? What are the functions of the State Boards? As to the functions of the State Boards, a State Board is, first, a judicial body; second, a clerical body; third, an executive body; and fourth, a supervisory body. That the State Board is the highest judicial body in the State is the decision of the Supreme Court of the United States. There is no going behind the actions of the State Board. It is the highest authority on the subjects over which it has jurisdiction. How does a Board become a judicial body? Not through appointment by a State Society. They have no authority to confer judicial powers; to create judicial bodies.

Dr. V. E. Turner: If the State law provides that the Society shall appoint the Board?

Dr. Crawford: It is not constitutional.

Dr. Peabody: The Association of Kentucky is a chartered body, for the purpose of creating a State Board of Examiners, who are elected by the State Association.

Dr. Crawford: I doubt if this decision would have the legal authority of a judicial body. A State society may recommend the proper men to the Governor, but the Governor's appointment alone confers judicial powers. I have confidence in the integrity of our State officials to do what is right when it is put before them.

Dr. Friedrichs; All this is class legislation.

Dr. Crawford: That objection has been raised by the opponents of law, but it is mere subterfuge. No law that is right and just can be classed as class legislation.

Dr. Friedrichs: These laws are all for the protection of the profession, not of the people. They do too much toward keeping out good men. It is time to turn about face, and get out some of those who are already in. A Board thus created, with judicial and supervisory and clerical powers, claims authority over the individual, which is contrary to the spirit of American citizenship. It deprives him of the right of going wherever he chooses to go and honestly earn his living. The law of the State of Virginia deprives me from the use of my functions as a free citizen. I can't go into the State of Virginia and practice dentistry because I am not a dental graduate. I have a diploma, but it is only honorary. The only leg I have to stand on is my M.D. So I cannot even go before the State Examining Board of Virginia; so I am deprived of my legal rights as an American citizen. That is contrary to the spirit of our institutions. It is dangerous doctrine, and I believe it is illegal. With all due respect for the great Commonwealth of Virginia, I believe that if I were to locate in Virginia and declined to appear before the Board, I believe if I went before the courts and claimed my rights as an American citizen, I believe I would beat the Examining Board. The question has never been tried on that line. If Alabama licenses a man, declares him competent to practice, and he practices in Alabama five years and then moves to another State, that State declares him not competent to practice there; that gives Alabama a slap in the face, and is a total disregard of the rights of Alabama. You may say what you please, but that is the doctrine of State rights, and it is a doctrine I love.

Dr. Donally (Washington City): The main question for us is, How to unify and harmonize our State dental laws? There are such incongruities and inconsistencies between the laws of the different States that it will be very difficult to get all the State

Legislatures, to so alter and modify the laws as to fix a standard of educational standing, as shall bring all into practical unity. Could this be done, then a State certificate or a college diploma would be universally recognized. This is in no sense in opposition to the colleges. It is simply a matter of conditions. When all requirements are complied with, every diploma will be recognized in all the States. The practical point is to draft a law which can be endorsed by the Board of Faculties, by the American and by the Southern Associations; the profession would unite on it, and it would go before the Legislature of one State after another, until all had adopted it. It would be such a long step in advance that any State that failed to adopt it would be at a great disadvantage. Dr. Turner said the States could not ask for a change, but it would go on the ground that the old laws have done what they were designed for. Changes must come in the march of progress. It puts a man at a great disadvantage to have to contend with this great diversity of dental laws in the different States. It is to be hoped that something practical will come out of all this. (Dr. Donally then referred to a Supreme Court decision in a case in West Virginia, found in *Cosmos* for 1890, or early in 1891.)

Dr. R. R. Freeman: We are drifting toward a point on which all can unite—*the truth;* there is no conflict in truth. The dental profession is working in this matter for the good of the whole people, and the people and the profession will unite to uphold and sustain the law.

The State Examining Boards have police authority; the leaven in the lump is working, and if we sincerely desire to do the right, we will reach the end; it is in the spirit of the times; in the atmosphere. The people see that we are seeking their good. The Legislature delegates powers to the Board for the good of the people. The time will soon come when we will have the same method as in the law, not an examination of the individual, but an examination of credentials. If his credentials are not all right, all the diplomas, and all the red and blue ribbons in the world, will not admit one who is proved a charlatan.

Dr. E. P. Beadles: If all the States had the same law, there would be no further trouble. The idea of Dr. Marshall of having representatives from the State Boards pass on the students before diplomas are awarded is impracticable. It would not be possible for a representative from each State Board to go to all the colleges in all the other States; there are too many State Boards, and too many colleges, and too many students. Since I have been a member of the State Board I have not known a single man to fail but those who deserved to fail, nor one to go through unless he

deserved to go through. Men from the colleges of high standing (not those of mushroom growth) never fail. There are some who manage to slip through—*to cheek through*—but the Boards can soon see who is competent and who is not.

Dr. Friedrichs: Dr. Freeman spoke for the people, but I speak for the profession. A man who has a diploma or a certificate from a State Board should be able to go from one State to another, as he pleases, without being put to any further expense or trouble. If a man has exhausted his field he should have the right to seek another.

Dr. Crawford: One of the suggestions of the President's address had reference to the appointment of commissions to settle mooted questions in dental practice. Your committee submitted that point to the Society for consideration. We had expected a paper to be read on the treatment and filling of root canals, and had designed asking that a committee be appointed to investigate and test each method presented. For this purpose I had prepared a number of teeth imbedded in plasters, that each individual might fill the root canals according to the method he advocated. The teeth were then to have been submitted to the committee for the purpose of making sections, thus ascertaining which of the different methods advocated would prove best fitted to fill all the requirements of root-canal filling. No such paper was read, however; the subject was not discussed. The teeth are here, imbedded in plaster, the roots unfilled. I will leave them with the Society.

Dr. John S. Marshall: I now move that a commission of three members be appointed by this Association to take under consideration and examination such "mooted questions in practice" as may be referred to it by the Association, and that they shall make an annual report to the Association, with such conclusions and suggestions as may grow out of their individual and collective work. Carried.

It was further decided that this be a permanent committee, appointed for one, two and three years, as their work could not be completed in one year.

Dr. W. G. Browne: I would suggest that the number be raised to five.

Dr. McKellops: The committee will never meet if it is too large.

Dr. John S. Thompson. Let the Committee on the President's Address be continued another year, that the topics presented be further discussed. There are many valuable suggestions in the committee's report that have not been considered. This report might be taken up at our next meeting.

Dr. Crawford: The Association is not competent to carry the President's address of one meeting, over to the next.

Dr. Thompson: It is competent to carry over the discussion of topics.

Dr. H. E. Beach: I rise to a point of order. The time has passed allotted to the discussion of the President's address. Subject passed.

Dr. McKellops. As is well-known to many of you, I have devoted many years to the accumulation of a dental library, and I have succeeded in getting together the largest dental library in the world. I am ready to purchase any additional books that are for sale, if the full descriptive title, with date of publication, is sent to me.

Dr. H. B. Noble, Chairman Committee on Voluntary Essays, read the following paper by Dr. L. G. Noel, Nashville, Tennessee:

COMBINATION OF GOLD AND RUBBER IN BRIDGES.

Dr. L. G. Noel, Nashville, Tennessee.

Suppose you have a case where the bicuspids and two anterior molars are lost, on one or both sides of the lower jaw. Make your gold shells to invest the teeth to be the abutments of the bridge, and take an impression, bringing them away. You next get a model in sand and plaster, and with this proceed to connect the two shells with a strong bar of platinum and iridium, which is to give longitudinal strength and afford attachment for the rubber. Now take a bite. This can be done with either wax or modeling composition placed about the bar and adapted to the gum while soft.

Building up enough between the shells we direct the patient to close the teeth on it and thus get the bite.

The completion of the work consists in adjusting suitable vulcanite teeth, and attaching them by the usual process. Sometimes it will not be necessary to take a bite. The teeth may be waxed to the bar and adjusted to the apposing teeth in the mouth.

As the rubber is to be cut away so as to make no bearing on the gum, no model of the gum will be required. It will readily be seen how much shorter this process is than making all gold dummy teeth, and soldering them together. It may not be a shorter process than soldering in porcelain teeth, but the work when completed will not offer as many crevices for the collection of fluids and food as the gold and porcelain, and we think the teeth will stand the strain of mastication much better than those attached by solder.

Many modifications will suggest themselves. For instance: Greatly increased strength may be obtained by soldering in two bars, and vulcanizing in swaged gold grinding faces, instead of porcelain teeth. These grinding faces may be well filled with solder, and for attachments, some platinum pins may be caught in this solder. These may be waxed on and readily bitten into adjustment.

A patient had lost all the upper molars and right second bicuspid.

I made a gold shell to invest the first bicuspid on the right side, and the second bicuspid on the left. As these teeth all had rather long crowns and

small necks, I did not carry these shells to the gum, but only let the gold extend to the knuckle. This, I think, much better than cutting away the enamel to bring the tooth to straight lines, and covering the entire tooth. After getting my shells constructed, and accurately fitted, the grinding surfaces of the two bicuspids carrying the shells were ground away, so as to shorten the bite sufficiently to allow for the thickness of gold laid over them. The same grinding was done on the lower bicuspids, the bridges having been left uncemented. After getting an impression, and model with the shells in position, an oval-shaped bar of platinum and iridium was bent in the form of a horseshoe, and so adapted to the model as to rest on the gum just behind the lingual surfaces of the teeth, and extending as far back as the space between the first and second molars. This carried it some distance posterior to the shells, and this part of the bar was intended to give attachment to the vulcanite and artificial teeth.

Having soldered the bar to the shells, a bite was taken, and the whole thing transferred to an accurate model taken from a reliable plaster impression, and completed in the usual way, using pink rubber, however, because of the possibility of its showing in the act of laughing.

This bar idea to connect and give support to teeth on opposite sides of the mouth, may be used in various forms, and is subject to many modifications. I used it successfully to connect two artificial superior lateral incisors. In this case, collars were made for cementing to the canines, and these collars connected by a bar that passes across on the lingual, or posterior surface of the centrals. The artificial laterals were soldered to this, and the fixture proved a great success. The usefulness of this bar idea in cases of regulating, becomes at once apparent.

The President, at this point, announced the committee appointed under Dr. Marshall's resolution (on "Mooted Questions in Dental Practice.")

Dr. John S. Marshall, Chicago; Dr. H. B. Noble, Washington City; Dr. R. R. Freeman, Nashville, Tennessee.

Dr. H. E. Belden, New Orleans, Louisiana, read the following paper.

ARTICULATORS.

H. E. Belden, M.D., D.D.S., New Orleans, La.

In presenting this paper I do not intend to give an exhaustive account of the subject, but will speak briefly of a few articulators that lay claim to having special advantages.

An articulator is a mechanical device to hold the plaster casts, in order to maintain the exact relations existing between the upper and lower jaws, thereby simulating the patient's mouth, and thus enabling the dentist to work out the case comprehensively.

Its underlying principle should consist in its possessing a certain number of motions, similar, but more than is found in the human jaw.

It is all essential that a perfect articulator should be capable of the following motions: from right to left; forward; backward and extending upward; and also have a hinge-like motion, so the plates can be opened and shut. These motions must be regulated by a retaining device.

Probably the first attempt at a mechanical contrivance was made by Dr. Thomas Evans, of Paris.

The most accessible form is the plaster form, which can be made at the same time the impression is poured; but its great defect is its lack of adjustment.

Dr. Genese has an articulator that is capable of very fine adjustment and of delicate mathematical alterations.

Dr. J. B. McPhason patented, in 1879, an articulator which has a clamping device for holding the plaster model.

The Plain Line articulator has apparently the best sale, notwithstanding the fact that it offers fewer advantages than any of the others previously mentioned. Its low price seems to have recommended it to the general public.

To meet the demands of crown- and bridge-work, there have been several smaller and simpler articulators placed on the market.

There is an articulator, patented May 19th, 1868, which has a backward, forward, and lateral motion corresponding with the movements of the jaw; a motion similar to the famous anatomical articulator of Dr. Bonwill. This gentleman has written more on articulators and occlusion and angles of the teeth, and has given these subjects more thought, than probably any other of the profession. Unfortunately, there has been a disposition shown to treat indifferently prosthetic dentistry. Look over the dental literature of the day, you will be surprised by the almost total absence of articles on plate-work. One of the contributors to the *Dental Cosmos* has drawn comparison between the many instruments made for manipulating gold and the few for packing amalgam., How much more striking is the deficiency in number of articulators invented?

The greater number of articles on prosthetics is bridge-work. A few years ago I heard a bridge-worker remark that the days of plates were numbered. Yes, they are numbered, but the number is like the grains of sand on the sea-shore.

Of course, if one could invent something to do away with the necessity for plates, it would be a great boon to the suffering mortal, but this is among the impossibilities; plates will continue to be worn as long as man exists, and if it be true what some writers say, there will be more of them worn in the future than now, for they would have us believe that our teeth are more perishable than those of our forefathers, so there will be more edentulous beings, and, therefore, more plates needed with each succeeding generation; so the usefulness of the articulator will keep pace with the ravages of time.

When we see a woman old and toothless, with sunken cheeks and shrunken jaw, restored by the use of plates to apparent youth and comliness, and, consider not only her appearance, but the comfort she enjoys, and the benefit to her health arising from the power to masticate her food properly, we should not regard prosthetic dentistry lightly. Dr. James Garretson tells us in his very fine work on oral surgery, of a famous mechanical dentist, who furnishes in his own person a striking example of what prosthetic dentistry can do. For, without teeth, or plumpers, he is metamorphosed from an apparently vigorous man, not over fifty, to an old and decrepit one of ninety.

I am diverging from my text, and have allowed myself to dwell too long on what is to me an all absorbing topic—the great advantage of plates, and

how much the public are indebted to the dentist for restoring their lost masticating members.

I intended to simply give a description of my device, and call attention to the defects common to articulators that have only a hinge motion, and as well to speak of the benefit it would be to have an articulator that when sets were made they would not have to be disfigured by alteration in articulation, by grinding the teeth to obtain a correct occlusion. "True articulation is, that no tooth is to touch before its fellow."

It is very difficult to obtain a correct occlusion on an articulator that holds the heel of the plate stationary, and the outer rim describing the greater arc of a circle.

An important feature of an articulator is to correct the defects of the bite, and probably those errors most frequently occurring—the holding a part of the jaw by the bite wax, in full cases; the too tightly closing of the jaws, and the protruding of the chin; when the jaw is extended the condyles slip down in the glenoid cavity, and in consequence the posterior teeth are held a part. You can prove this by experimenting personally in your own mouth. With this class of bites a correct articulation cannot be obtained with an articulator that describes the arc of a circle. When you shorten or lengthen the bite with the set-screw, you will find that the anterior teeth are shortened or lengthened in greater proportion than the posterior ones. Therefore a set of teeth made in this way, when put in the mouth will have the molars touch or stand apart in the same proportion that the bite was lengthened or shortened, and the teeth will have to be ground to obtain a correct occlusion. I do not mean to say that this cannot be avoided, and an absolutely correct bite not taken; only that a hurried, busy operator can hardly give the time to these details, and especially when the impression and bite are given to his assistant, or mechanical dentist, with which to work up the case, who has not even had the advantage of seeing the patient.

These facts being recognized, a contrivance must be made to meet the requirements; and this little device, which I present for your consideration, will, I hope, meet all the demands.

In this articulator the bite can be lengthened or shortened, keeping the plates parallel and not forming the arc of a circle. It is capable of being extended further between plates than other articulators, which is a great convenience in full cases, or the wings can be brought in close apposition for single cases. The upper plate, as in most articulators, can be slipped back and forth to accommodate itself to the individual requirements of each and every jaw. The bite can be moved from one side to the other, to correct the patient's biting toward the right or left. It also has a hinge-like motion, common to most articulators, which is a great convenience in trying the occlusion of each tooth as it is placed on the wax plate. It allows a complete view of the palatine portion of the plate, while the plates are closed, this being quite an advantage, rendering it possible to see if the inside cusps of the teeth touch in articulating, thereby preventing tilting or rocking or fracturing the plate. It has no small screws or parts to be lost in the débris of the laboratory, and is made light and compact, and ought to commend itself as a true, reliable articulator.

Dr. H. B. Noble read the following voluntary essay:

UNPROFESSIONAL PROSTHETICS.

Dr. G. N. Johnson, Concord, N. H.

It is our purpose to discuss prosthesis as relating to artificial dentures, and especially to rubber plates.

There is no branch of our practice which actually requires more skill and judgment, or more varied and extensive scientific information. It is easier to find ten men who can insert good gold fillings than to find one who is able to construct a good set of teeth, even on rubber, that shall approach to scientific correctness in adaptation, expression, and articulation.

A few scientific and thinking men have, indeed, made wonderful advancement in the science of prosthesis, and their contributions to our literature are as well-springs of water in a desert land. Yet the average of attainment is less, the standard is lower, and prosthetic dentistry has gone backward, not forward, in the past ten years. Never was so much injury inflicted, never so much suffering occasioned, never so many human faces made shocking and unnatural by dental handicraft.

How much we hear of late about "rubber disease" and kindred ills. A prominent dentist, in a recent paper, gives the semiology and syndrome of this "disease" as follows:

"A low order of vitality in the parts covered by the plates and its peculiar pallor; irritation, swelling, redness, inflammation, congested, engorged, hyperemic condition; granulation, granulated masses like a strawberry, red, purple, scarlet, soft and spongy; half the arch filled with a spongy mass; blood oozing from the diseased parts; turgidity of the vessels; roof of the mouth like half decayed raw beef cut across the grain; suppurating, discharging condition, ulceration; pus exuding from the folds; sanguino-purulent fluid constantly exuding from the apertures in the palate over the necrosed bone; sensitiveness so obtunded that no pain is felt, or in other cases, a burning, drawing feverish sensation; lines of inflammation extending to the throat, causing disagreeable tickling sensation, and annoying cough; bronchial affections, chronic catarrh; sloughing of the soft parts; in some cases death."

And must we confess, *miserabile dictu*, that all this is being continually inflicted on the public by those who are recognized as members of our profession?

The symptomology of the dread "disease" is in the main correct as given.

Its terminology or nomenclature, though far from scientific, is sufficient to designate it. But pardon a slight digression, while we consider more carefully its true etiology. Examining the offending plate we may find a whole chapter in etiology. Observe carefully through a good lense the rough, plaster surface, the knife-like edges, the suction-ridges of needless depth, resembling in miniature the ragged tops of the Sierra mountains; see how faithfully every air bubble and careless cut in plaster has been copied in the rubber, like so many gravel stones to irritate and wound the tissues. And what do we see in the center—is it a cesspool walled about to increase its capacity for filth? No, that is an "air chamber" with a suction-ridge around it; and it serves not only to produce a tumor of fanciful design and raw beef edges, but also to increase the thickness of the plate and make enunciation still nearer an impossibility. Worst of all, how carefully the

impress of the palatal ruge has been preserved—all the sharp, irregular ridges, undercuts and overhanging edges presenting to this especially delicate and sensitive portion of the mouth a jagged and unyielding surface better suited for a nutmeg-grater or beef-steak crusher.

Were it possible to produce in gold an exact *fac-simile* of such a surface, every irritating point sharply defined, and every nidus of filth and disease retained, what effect do you suppose it would have on the mouth? A little absorption of the alveolar ridge, a little recession of the plate, a slight change of bearing consequent on the wearing away of the opposing teeth, and all these ridges and excresences must again and again carve for themselves new resting places in the mouth of the victim.

To make the misery complete, the dentist need only to so arrange the teeth that all pressure of mastication shall fall on the anterior portion of the jaw, or to so adjust them that they shall articulate on inclined planes, and at every occlusion the plate will rock and partially rotate, crushing and lacerating the mouth till a pronounced case of "rubber disease" is developed.

There are still some dentists of high degree who believe that mercurial poisoning results from the wearing of red rubber. And some of the sad cases they report do seem a trifle ludicrous—the unfortunate lady from Kansas suffering eleven long years from chronic diarrhea, nor could be healed of any, all occasioned by the wearing of a common rubber plate, and the consequent absorption of mercury! A brief calculation of the largest possible daily dose during that eleven years, even supposing the rubber to be soluble at all, seems to establish the fact that red rubber is a cathartic besides which Ayer's pills fade into insignificance.

We offer the following suggestions for the treatment and prevention of the disease:

1st. Vulcanize the rubber plate between metallic surfaces, and give it the same smooth, continuous, polished surface and rounded margins as to a gold plate.

2d. Adjust the teeth to articulate on surfaces paralleled with the line of occlusion, and thus avoid clatter and twist and tilting of the plate. More dentures are failures from faulty articulation than from any other cause.

Whether prosthetic dentistry is professional or otherwise depends not on the kind of material employed, but on the ethics which governs and the science which directs. That portion of our practice is most professional which most truly subserves the interest of our patients. The time is not yet come, nor will it soon, when prosthesis, senselessly termed "mechanical" dentistry, shall be divorced from the profession and relegated to the tradesman or mechanic. And so long as the insertion of artificial teeth remains a necessity to our patients and a recognized feature of dentistry; so long as it is taught as an essential part of our college curriculum, and we seek by legislative enactment to reserve to ourselves the exclusive right; so long as we assume to perform the work at all, it remains our professional duty in this, as in any other branch of our practice, to render careful, intelligent, and conscientious service.

A paper by Dr. W. G. Browne, Atlanta, Ga., entitled "Varnishing Cavities," was read by title, and ordered printed in the transactions.

VARNISHING CAVITIES.

W. G. Browne, Atlanta, Ga.

The incompatibility of tooth-substance and the metals we use for filling teeth is a well-recognized fact, and it is always good practice to interpose somesubstance between the metal and tooth-structure, to prevent, as far as possible, any injurious effect from such incompatibility. Gutta-percha, chloro-percha, cement, and varnish, each have their merits, but none seem to have so many points of excellence as a clear resin, such as damson, dissolved in chloroform. It acts as a non-conductor of thermal changes, as well as an insulator against electrical influences. It is not readily soluble in the fluids of the mouth. Being transparent, no discoloration is shown when used, when enamel walls are thin; in fact, it prevents discoloration of the tooth from oxidation when an amalgam is used which contains metals which oxidize in the mouth. To a limited degree, it may act as a support to frail walls of enamel, especially if the filling be inserted while the varnish is in a plastic state; this refers more especially to amalgam fillings.

In the insertion of large gold fillings it is helpful, in starting the filling, holding the first mats or cylinders of gold firmly adherent to the dentine, and makes it almost out of the question for gold fillings to come out if proper attention has been given to the method of applying the varnish and gold in the tooth when commencing the filling.

I do not for a moment advance the idea that we should depend on the varnish to retain the filling, independent of other means, but it will not be found necessary to make deep retaining-pits, but only slight undercuts in most convenient places in the cavity, thus saving the operator valuable time, and no harm can possibly result from its use, while much good must come.

I am satisfied that when the profession realizes the benefits accruing from this method it will be universally adopted.

Also, a paper by Dr. William N. Morrison, St. Louis, entitled "Care of Infant's Teeth."

CARE OF INFANTS' TEETH.

William N. Morrison.

Something should be done by the dental profession to prevent so great an infant mortality. The general medical practitioners and nurses have been too neglectful of their trusts at this eventful period of infant life. They are intrusted with the care of mouth, gums and teeth of infants for too long a period. The dentist is not consulted or considered at all of any service till the teeth are erupted, eroded, and sometimes decayed beyond repair. I will make the assertion, without fear of successful contradiction, that three-fourths of the deaths of infants under the age of three years are caused by complications arising from their teeth. Nervous tension, not relieved by normal growth or development of the parts, seeks relief in reflex action on the stomach and intestinal tract.

Let us take a line of treatment which is indicated by the first motion of the little one itself when suffering from these causes. They stuff their fists in their mouths, and bite on the bed-clothing or anything which comes in reach of their jaws. "Everything goes to a baby's mouth."

Let the mother or nurse rub the alveolar ridge and plate with thumb and finger, and endeavor to expand the arch for the teeth in a natural direction of growth or development, and use the lancet frequently over the points of greatest tension.

I have known infants to be brought out of spasms by the timely use of this instrument, and many lives to be saved against the advice of family physicians and immediately interested friends, who would almost faint at the idea of having their little ones lose a drop of blood.

The care for the little ones is so deeply implanted within the hearts of all that I can but mention this to enlist the best interests of all champions of the healing art.

Do not slug them with drugs, or give one drop of soothing syrups, or so-called harmless vegetable or animal compounds, but depend on physical development.

Condensed milk teeth are not good or up to the standard.

Mother's milk first, then the milk from a healthy field-fed cow.

Give the child plenty of out-door air and sunlight; physical culture and development to all parts of the body, and in troubled dentition, special massage in the mouth.

The same line of massage treatment I recommend for children of older growth, with the second teeth, by pressure with the thumb and finger or knuckle on the prominent points or teeth, within or out of the arch. They are cartilaginous and yield readily.

Dr. Morrison also offered the following brief report on therapeutics:

St. Louis is the headquarters of manufacturing chemists, and many valuable proprietary remedies are produced there, and they have good words said for them in all parts of the world. In using these, we should not forget the good old-fashioned remedies, that have done such valuable service for so many years—creasote, sal-ammoniac, borax, and sulphate of copper. For mucous patches in the mouth, one application with crystal sulphate of copper is sufficient.

The Chair: It is a subject of extreme embarrassment to pass over so many papers without discussion, but from lack of time discussion is impracticable.

The hour set apart for elections having arrived, the selection of a place of meeting being first in order, Dr. R. R. Freeman nominated Atlanta, Ga.

Seconded by Dr. W. G. Browne, who said: We are going to have a great Fair in Atlanta next year, and we are glad to ask you to accept our hospitality. I hope the meeting will extend over ten days, for we want you to see our city, of which we are proud, and the city will be proud to have you there.

Dr. V. E. Turner: Does your resolution include the time of meeting?

Dr. Freeman: I prefer to leave that with the Executive Committee.

Dr. W. R. Clifton: I object to having our meeting during the time of the Atlanta Exposition. There would be too much going on, and it would interfere with our work.

Dr. W. G. Browne: We want you there just at that time. There will be a special dentists' day set apart, and we want you all there on that day. Another point; it will cost you less then, than at any other time, as railroad rates will be materially reduced.

Dr. Clifton: If the time is left to the Executive Committee, I, for one, will vote for any time rather than October.

Dr. H. E. Beach: The Association should, by ballot, select both time and place of meeting.

Dr. T. T. Moore: As there will be a special dentists' day, I move that the time be left open. The Atlanta dentists, after conference with the Fair authorities, can communicate with the Executive Committee.

There being no other nominations for place, the Secretary was instructed to cast the unanimous vote of the Association, and Atlanta was declared the next place of meeting.

On motion of Dr. R. R. Freeman, the time of meeting was left to be announced by the Executive Committee, after due conference with the dentists of Atlanta and the authorities of the Fair.

ELECTION OF PRESIDENT.

Dr. J. Y. Crawford: I move that the rules be suspended, and the Secretary be instructed to cast the unanimous vote of the Association for one of our most distinguished members, Dr. H. E. Beach.

The Secretary: It is unconstitutional.

Dr. Crawford: It is not unconstitutional to suspend the rules, if the vote is unanimous.

The Chair: The motion is out of order. The Constitution gives definite instructions in this matter. Every member is entitled to vote for President without nominations. Prepare your ballots.

Thirty-three ballots were cast, seventeen necessary to an election. Of these, Dr. H. E. Beach (Clarksville, Tenn.), received fifteen; Dr. J. S. Thompson (Atlanta), seven; Drs. S. B. Cook, W. G. Browne and L. P. Dotterer, three each; Drs. Clifton and Calvert, one each.

On the second ballot, thirty-three votes; of which Dr. Beach again received fifteen; Dr. Thompson, thirteen; five scattering. Seventeen necessary to a choice.

On the third ballot, thirty-four votes; Dr. Beach receiving sixteen; Dr. Thompson, seventeen. Eighteen necessary to a choice.

At this point Dr. Beach requested that his name be dropped in favor of Dr. Thompson, of Atlanta, as the meeting is to be held in that city.

The friends of Dr. Beach declined to accept his withdrawal, and on the fourth ballot the vote stood: Dr. Beach, twenty; Dr. Thompson, fourteen.

Dr. Beach having received more than the eighteen votes necessary to a choice, he was declared elected; and, on motion, the election of Dr. H. E. Beach, Clarksville, Tenn., as President of the Southern Dental Association, was declared unanimous.

ELECTION OF FIRST VICE-PRESIDENT.

On the first ballot thirty-one votes were cast; sixteen necessary to a choice, of which Dr. J. S. Thompson received thirteen; Dr. W. R. Clifton, five; Dr. S. B. Cook and Dr. Seals, each four; scattering, five.

On the second ballot, Dr. J. S. Thompson received twenty-three votes, and was declared elected First Vice-President.

SECOND VICE-PRESIDENT.

On the first ballot thirty-one votes were cast; Dr. W. R. Clifton received eleven; Dr. L. P. Dotterer, seven; Dr. Seals, six; seven scattering; sixteen necessary to a choice.

On the second ballot, Dr. Clifton received eighteen votes; Dr. Dotterer, eight; Dr. Seals, four, and four scattering. Dr. Clifton was declared elected, but resigned in favor of Dr. Dotterer, being a member of the Executive Committee and not competent to hold two positions, he made choice of the latter position.

On the third ballot, Dr. Dotterer received twenty votes; Dr. Seals, nine.

Dr. L. P. Dotterer. Charleston, South Carolina, was therefore declared elected Second Vice-President.

THIRD VICE PRESIDENT.

Dr. Seals was elected Third Vice-President on the second ballot for that office.

At this point, Dr. Geo. Evans, New York City, was elected to active membership in the Association.

ELECTION OF TREASURER.

Dr. B. H. Catching said that the election of Dr. H. E. Beach to the office of President left vacant the office of Treasurer, which Dr. Beach had held for a number of years, and which previous to the election of Dr. Beach had been filled for many years by Dr. H.

A. Lowrance, Athens, Georgia, and he hoped the unanimous vote of the Association would be given to Dr. Lowrance.

The rules were suspended and the Secretary authorized to cast the unanimous vote electing Dr. H. A. Lowrance, Treasurer of the Association.

Dr. S. W. Foster, Decatur, Alabama, was unanimously re-elected Recording Secretary.

Dr. R. R. Freeman moved that the Secretary be authorized to cast the unanimous vote of the Association for the retiring President, Dr. B. Holly Smith, as Corresponding Secretary, Dr. Smith having declined the proffered honor.

Dr. J. Y. Crawford said: This is a most important office. Dr. D. R. Stubblefield has occupied the position for many years, but I do not know that he has ever done anything more than fill the position. He is eminently competent to serve in that capacity, and if we had any guarantee that he would do the work of the office, I would move that he be re-elected. There is much business that should be transacted by the Corresponding Secretary, especially in the matter of securing reduced railroad rates, etc.

Dr. Catching: As the President and the Corresponding Secretary have a great deal of joint business to transact, I suggest that the incoming President name the Corresponding Secretary.

Dr. J. S. Thompson: I would like to name a man who has held the office before, and who was diligent in writing letters (though it is true no one could read them). I will name Dr. E. P. Beadles.

Dr. Freeman: I move that the Secretary cast the vote of the Association for Dr. Beadles.

Dr. Beadles: The duties of the office would be entirely new to me. I would prefer that some one else be given a chance.

Dr. J. Y. Crawford: In view of my remarks, I would not like to have Dr. Stubblefield ruled out, without being given a chance.

The ballot was cast, Dr. Beadles receiving twenty-three votes; Dr. Thos. P. Hinman, nine; Dr. Stubblefield, four; Dr. Calvert, one.

Dr. E. P. Beadles was elected Corresponding Secretary.

Dr. V. E. Turner was elected to succeed himself on the Executive Committee, and Dr. S. B. Cook was elected to succeed Dr. Muckenfuss, whose term expires.

Dr. R. R. Freeman: I have a written resolution to offer in regard to the appointment of a Legislative Committee.

"*Resolved*, That the Southern Dental Association, with a view to unity, harmony and concerted action, appoint a Special Committee on Dental Legislation, to represent it in any movement in which its co-operation may be sought or its 'good offices' accepted, for the improvement and unification of dental laws."

Adopted.

Dr. H. E. Beach: I do not think that any man connected with the colleges should be appointed on this committee. The effect on the legislative bodies would be injurious to the cause represented by the committee.

Dr. Beadles: It would subject the college faculties to criticism, and be unjust to them.

The Chair: The members of the committee should be selected from college faculties or any other body; the question of college men would not come up in this connection.

Dr. Beadles: I do not wish to seem obstinate. I am a great friend to the colleges, but the college faculties should be relieved from this committee work.

Dr. R. R. Freeman: I submit that the Chair appoint this committee at its discretion.

Drs. Finley, Crawford and Freeman were appointed on this committee.

Dr. S. W. Foster, Chairman of the Publication Committee, reported that, as on previous occasions, there had been some dissatisfaction about the publication of the proceedings of the Lookout Mountain meeting, in the *Southern Dental Journal.* It had been understood that they were to publish them free of any expense to the Association, complete in one issue.

Several papers had been laid over to a second issue of the journal, and a bill of $75.00 for printing had been presented. This bill had been paid, but it was desirable that a distinct understanding be had for the current year. With a view to this he, as Chairman of the Publication Committee, had been in correspondence with the *Southern Dental Journal and Luminary*, *Dental Headlight*, *Cosmos*, and ITEMS OF INTEREST. He had received a proposition from the ITEMS OF INTEREST to publish the proceedings, and mail to every member of the Association. As the proposition now stands, after personal interviews with the editor, Dr. T. B. Welch, and Mr. Robinson, of The Wilmington Dental Manufacturing Company, publishers of the ITEMS OF INTEREST, they are to take the proceedings and publish them as they see fit in the monthly issues of the ITEMS OF INTEREST, and after four or five months, reprint it complete in book-form, either in cloth or paper, and mail to every member of the Association.

This proposition is before you, for you to act on. Dr. Catching, as a member of the Publication Committee, thinks the proposition a fair one, as they are to give us a clean library volume, with nothing of the "ITEMS" about it.

Dr. Crawford: Does the contract state definitely when the volume is to be ready?

Dr. T. B. Welch: Two of the terms of our proposition have not been mentioned. We propose, at our own expense, to furnish all the illustrations of appliances, etc., that may be necessary in connection with the papers. It must also be understood that the matter is to be properly edited, all unnecessary repetitions and extended verbiage avoided, but not a single thought will be expunged, though perhaps expressed in fewer words.

Dr. Crawford: Do you propose to send a copy to each member, according to the Secretary's list?

Dr. Welch: Yes; that is our intention.

Dr. Crawford: And you offer a full report in one volume, on good paper, bound in cloth?

Dr. Welch: Yes; you can have your own way on those points. When I came down here I had no idea of the pleasant intimacy we should form. I am very much pleased with the impression gained, and that is why I am in favor of the proposition made to you. Mr. Robinson and I have taken the entire responsibility in this matter, as we feel in entire sympathy with you, and desire to have common interests with you.

The proposition, as stated by Dr. Foster and Dr. Welch, was put to a vote and unanimously accepted.

Dr. R. R. Freeman: I was glad to hear Dr. Welch say he would edit our papers and speeches, as I have sometimes been ashamed when I saw myself on paper.

Dr. T. H. Parramore: Dr. W. W. H. Thackston, who is prevented by illness from being with us, had a special matter that he desired to lay before you, and which he has delegated to me. There was never in all this broad land a man whom we more honor, or whose memory we should more revere, than that of Dr. Chapin A. Harris. His labors have never received the public acknowledgment due them. A movement has been started in the Dental Association of Virginia looking toward a fitting monument to his memory. They desire to ask the Southern Dental Association to take a hand in this work. It should also be brought before all the State Associations.

Dr. George J. Friedrichs: I move that the Corresponding Secretary of this Association be instructed to inform the Secretary of each State Society of this movement, requesting them to join with the Southern Dental Association.

Dr. P. G. Browne: Is it contemplated to raise a fund? If so, it should be incorporated in the resolution.

Dr. B. Holly Smith: Four years ago a "Chapin A. Harris

Association" was organized in Baltimore. It was proposed to raise a fund for a similar purpose, and a concert was given, which yielded the sum of $240. That would form a nucleus for the present project, and I think it can be diverted to the movement started here by Dr. Parramore.

Dr. W. G. Browne: I move as an amendment to Dr. Friedrichs' resolution that local societies be invited to contribute toward a fund for this memorial. Let the Corresponding Secretary be instructed to bring before all State and local societies that an effort is being made to erect a suitable monument to the memory of Chapin A. Harris, and solicit contributions for this purpose.

Dr. Parramore: Of course nothing can be done without funds. I am ready to accept any amendments which will further this object. It will necessarily be some time before it can be decided what shape the memorial shall take, whether it shall be a shaft, or a dental library, or an exhibit of all dental instruments from the earliest to those of the present day, showing the march of the history of dentistry, or a bust of Chapin A. Harris. We must decide what we want, and then what it will cost, and then raise the funds, and in the meantime the funds can be accumulating.

Dr. E. P. Beadles: I will write the letters, but I move that a Treasurer be appointed. I do not wish to hold other people's money.

Dr. Crawford: I move that our Corresponding Secretary be made Treasurer.

Dr. E. P. Beadles: I move that Dr. Crawford be made Treasurer of the Chapin A. Harris Memorial Fund.

Dr. Friedrichs: This matter will come up at many succeeding meetings. The medical profession has been at work for twenty years, trying to get up a memorial to Dr. Rush.

Dr. McKellops: I think the Secretary will have enough to do to correspond with the Secretaries of all the State and local societies.

Dr. Friedrichs: I make myself responsible for the State of Louisiana. (Applause.)

Dr. Beadles: I will write all the letters, but I do not want to hold any funds. I nominate Dr. H. E. Beach. He is accustomed to handling money. I positively resign as Treasurer of the fund.

Dr. H. E. Beach was elected Treasurer of the Chapin A. Harris Memorial Fund.

On motion of Dr. Parramore, Drs. B. H. Smith, J. Y. Crawford and John S. Thompson were appointed a committee to bring this matter before the American Dental Association.

On motion of Dr. Thompson, the Secretary was instructed to send a telegram of greetings to Dr. Thackston, wishing him a speedy recovery from his illness.

The following dispatch was received in reply:

FARMVILLE, VA., August 6th, 1894.

"*Loved friends of the Southern Dental Association:*—A thousand thanks for your kind remembrance. Your sympathy is appreciated, and from my heart of hearts reciprocated. W. W. H. THACKSTON.

Dr. John S. Marshall stated that he had expected to lay before the Association a detailed statement of the finances of the Executive Committee, but that he had not been able to complete the statement in time for this session.*

MONEYS RECEIVED.

American Dental Association	$500 00
Alabama	130 00
Arizona	20 00
Arkansas	20 00
California	558 00
Canada	10 00
Chili	10 00
China	30 00
Colorado	40 00
Connecticut	210 00
Cuba	10 00
Delaware	40 00
District of Columbia	235 00
England	50 00
Florida	20 00
France	100 00
Germany	10 00
Georgia	115 00
Hawaii	40 00
Illinois	2,826 00
Indiana	355 00
Iowa	460 00
Iowa State Dental Association	100 00
Italy	10 00
Kentucky	110 00
Kansas	130 00
Louisiana	60 00
Maine	190 00
Maryland	250 00
Massachusetts	395 35
Mexico	20 00
Michigan	235 00
Minnesota	11 70
Mississippi	$40 00
Missouri	715 00
Montana	10 00
Nebraska	180 00
New Jersey	450 00
New York	1,455 30
New South Wales	30 00
New Hampshire	10 00
North Carolina	210 25
North Dakota	40 00
Ohio	784 00
Oregon	$20 00
Paraguay	20 00
Pennsylvania	780 30
Rhode Island	25 00
Russia	30 00
Scotland	10 15
Southern Dental Association	200 00
South America	10 00
South Carolina	130 00
South Dakota	10 00
Spain	20 00
Switzerland	20 00
Tennessee	280 00
Texas	170 00
Vermont	120 00
Virginia	100 00
Washington	80 00
West Virginia	10 00
Wisconsin	150 00
Total	$13,790 05

* Dr. Marshall presented the following statement to the American Dental Association, with the request that it be incorporated in the report of the Southern Dental Association.

MONEYS RECEIVED—*Continued.*

Brought forward.....	$13,790 05	Disbursements.....	$10,168 96
The committee had, in the Columbian National Bank at the time of its failure, the sum of $400, on which dividends have been received, amounting to.....	249 74	Colorado Bank.....	249 74
		Deficit.....	163 41
		Balance in Merchants' Loan and Trust Bank..	3,457 68
Total.....	$14,039 79	Total	$14,039 79

An early estimate of the amount necessary to cover all expenses put the figure at $15,000. There is about one thousand dollars to be raised yet to pay the cost of publishing the transactions, engraving the illustrations, etc. Unless some way can be found to raise this sum, the Executive Committee will be left a thousand dollars in debt. It is not right to ask the committee to pay this, as the above statement does not include the expenses of the members of the committee for railroad fare, hotel bills, etc., while attending to the work of the committee. This has amounted to over $4,000, which has been cheerfully donated to the Congress. The amount subscribed to the Congress will not be sufficient to meet the expenses of the Executive Committee by at least $1,000, and they call on the dental profession to raise that amount and free them from debt. Dr. Marshall stated that there were still on hand some three hundred of the memorial medals, a beautiful work of art in bronze, which should be prized by every member of the profession as a souvenir of the greatest dental congress ever held in the history of the world. These medals are for sale at $10 each.

At the conclusion of Dr. Marshall's report the American Dental Association voted the sum of $500 from the treasury toward meeting this deficit. Dr. Marshall, at a later session stated that he had raised $270 more, leaving $230, which he hoped to raise before the close of the meeting. The transactions will be delivered as soon as the amount necessary to pay for their publication is in hand.

On motion, the thanks of the Association were tendered the Virginia State Dental Association for their courteous hospitality, the railroads and hotels for the reduced rates allowed, and the dental dealers for the assistance rendered in furniture and materials for the clinics.

On motion of Dr. Crawford, it was made the duty of the incoming President to nominate a committee of three, to be known as the Clinical Staff, to take charge of the business of the clinics, not as operators, but as managers and helpers, in order that the clinics may be made more satisfactory and less cumbersome than heretofore.

There being no further business before the Association, Drs. Noble and Moore were appointed to conduct the President-elect to the Chair.

In vacating the Chair, Dr. B. Holly Smith, the retiring President, said that he wished to tender his hearty thanks to the members of the Association for the valuable assistance they had rendered him in the performance of his onerous duties.

On motion of Dr. Crawford, a vote of thanks was tendered the retiring President for the able and efficient manner in which he had performed the duties of his office.

Dr. H. E. Beach, the incoming President, was then conducted to the Chair. He said: In assuming the position of your presiding officer I realize my incompetency to fulfil the duties of the position unless aided by all the members of the Association. I know you all personally; I know you to be gentlemen, and ardent workers for the advancement of our profession. I feel that whenever I may be compelled to call on you for help you will render assistance cheerfully and with alacrity. I thank you for this honor, which you have conferred on me unsought. I now call you to order for the completion of our business.

Dr. McKellops: One point has been neglected. The duties of Chairman of Clinics are very arduous. I have acted in that capacity myself, and I know what it is. I move a vote of thanks to Dr. Crawford for the noble manner in which he has filled that office. Carried.

On motion, adjourned to meet in Atlanta, Ga., in 1895, at a date to be announced by the Executive Committee.

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